The OIL and GAS JOURNAL

PRODUCING REFINING ENGINEERING MARKETING

VOL. 27. NO. 25. TULSA, OKLAHOMA, NOVEMBER 8, 1928

Copyright, 1928, by The Petroleum Publishing Co.

TABLE OF CONTENTS

SPECIAL ARTICLES

Crude Oil Situation Appears Brighter 31
By Andrew M. Rowley
Plan to prevent waste at Santa Fe Springs important factor. Higher prices justified by conditions.

Plan Proration for Santa Fe Springs 33
By L. P. Stockman
Conservation of natural gas is basis of method to be acted on by operators this week. Committee to be in charge.

Winkler County Potential Declines 33
By James H. Dameron
Increase in allowance likely to hasten encroachment of water.

Mid-Continent Refinery Runs High 34
By W. T. Ziegenhain
Exceeded only by September record. November total 550,000 barrels.

Geophysics Big Factor on Gulf Coast 35
By Neil Williams
During past four years about 64 domes have been discovered.

Automatic Flowing of Small Wells 36
By R. Van A. Mills
Extensive experiments conducted by large company to lower lifting costs.

Magnetometer Survey of Oklahoma 37
By L. Spraragen
Various sections described and geological data given with results of surveys.

California Prepares for Flood of Oil 38
By J. E. Eaton
Production of 800,000 barrels to be attained probably in February.

Oil as an Investment (Editorial) 40

American Petroleum Institute Program 42

Field Problems and Their Solution 70
Edited by Thomas F. Smiley

Field Operations in October 135

Bureau of Mines Report for September 137

Two Oklahoma Pools Caused September Increase 152

FIELD OPERATIONS

Late Fields 42

North Texas and Panhandle 43-146
By James H. Dameron

West Texas 44-146
By James H. Dameron

Oklahoma 47
By J. L. Dwyer

Kansas 48
By J. L. Dwyer

North Louisiana-Arkansas 51
By D. H. Bancroft

Muskegon, Michigan 52
By Special Correspondent

Southwest Texas 52-55
By B. D. Stevenson

Gulf Coast 55
By Neil Williams

Rocky Mountain Area 56
By Tolbert R. Ingram

Canada 56
By Victor Lauriston

California 59
By L. P. Stockman

Eastern Fields 60
By D. S. Wakenight

Kentucky-Tennessee 64
By Whit

Central West 64
By Whit

East Central Texas 125
By Neil Williams

REFINING AND MARKETING

Oklahoma Gasoline Prices Unchanged 32
By W. T. Ziegenhain
Natural gasoline lower. Kerosene weaker. Lubs revised downward.

Chicago Spot Market Light 122
By J. B. Waldo
Large refiners holding prices firmly but tendency less strong.

Gasoline Down, Lubs Up on East Coast 123
By Special Correspondent
Good demand for tank car motor fuel with favorable weather.

Development of American Oil Shale 124
By Harry H. Hill
Government carrying on experimental work on production and refining.

Brief Items for Petroleum Refiners 126

Natural Gasoline Manufacture 127

Refinery and Crude Prices 128-129

Tank Wagon Quotations 130

Technical Questions Answered 134
By Dr. C. K. Francis

Of Interest to Sales Departments 143

Consider Disposal of Crankcase Oil 144
By Charles E. Kern
District of Columbia investigation indicates lubricants can be reclaimed.

ARTICLES OF GENERAL INTEREST

The Advertisers' Index 29

Men Known in Oildom and Personals 66

Natural Gas Developments 69

Equipment and Supplies 95

Pipe Ordered by Roxana Corporation 105
By B. E. V. Luty

Classified Want Advertisements 120-121

Oil Securities Market 132-133

Recent Patents 166

Crude Petroleum Statistics 170

BE A REGULAR READER

The OIL and GAS JOURNAL Tulsa, Okla.

You are hereby directed to mail The Oil and Gas Journal to me for.....year. Enclosed find remittance $.....

Classify my interests as checked by me.

.....Producing .....Refining

.....Equipment .....Marketing

Name.....

Address.....

City.....

$6 a Year

$3 6 Months

Refinery Section Starts on Page 122

The OIL and GAS JOURNAL

PRODUCING REFINING ENGINEERING MARKETING

VOL. 27. NO. 25. TULSA, OKLAHOMA, NOVEMBER 8, 1928

Copyright, 1928, by The Petroleum Publishing Co.

TABLE OF CONTENTS

SPECIAL ARTICLES

Crude Oil Situation Appears Brighter 31
By Andrew M. Rowley
Plan to prevent waste at Santa Fe Springs important factor. Higher prices justified by conditions.

Plan Proration for Santa Fe Springs 33
By L. P. Stockman
Conservation of natural gas is basis of method to be acted on by operators this week. Committee to be in charge.

Winkler County Potential Declines 33
By James H. Dameron
Increase in allowance likely to hasten encroachment of water.

Mid-Continent Refinery Runs High 34
By W. T. Ziegenhain
Exceeded only by September record. November total 550,000 barrels.

Geophysics Big Factor on Gulf Coast 35
By Neil Williams
During past four years about 64 domes have been discovered.

Automatic Flowing of Small Wells 36
By R. Van A. Mills
Extensive experiments conducted by large company to lower lifting costs.

Magnetometer Survey of Oklahoma 37
By L. Spraragen
Various sections described and geological data given with results of surveys.

California Prepares for Flood of Oil 38
By J. E. Eaton
Production of 800,000 barrels to be attained probably in February.

Oil as an Investment (Editorial) 40

American Petroleum Institute Program 42

Field Problems and Their Solution 70
Edited by Thomas F. Smiley

Field Operations in October 135

Bureau of Mines Report for September 137

Two Oklahoma Pools Caused September Increase 152

FIELD OPERATIONS

Late Fields 42

North Texas and Panhandle 43-146
By James H. Dameron

West Texas 44-146
By James H. Dameron

Oklahoma 47
By J. L. Dwyer

Kansas 48
By J. L. Dwyer

North Louisiana-Arkansas 51
By D. H. Bancroft

Muskegon, Michigan 52
By Special Correspondent

Southwest Texas 52-55
By B. D. Stevenson

Gulf Coast 55
By Neil Williams

Rocky Mountain Area 56
By Tolbert R. Ingram

Canada 56
By Victor Lauriston

California 59
By L. P. Stockman

Eastern Fields 60
By D. S. Wakenight

Kentucky-Tennessee 64
By Whit

Central West 64
By Whit

East Central Texas 125
By Neil Williams

REFINING AND MARKETING

Oklahoma Gasoline Prices Unchanged 32
By W. T. Ziegenhain
Natural gasoline lower. Kerosene weaker. Lubs revised downward.

Chicago Spot Market Light 122
By J. B. Waldo
Large refiners holding prices firmly but tendency less strong.

Gasoline Down, Lubs Up on East Coast 123
By Special Correspondent
Good demand for tank car motor fuel with favorable weather.

Development of American Oil Shale 124
By Harry H. Hill
Government carrying on experimental work on production and refining.

Brief Items for Petroleum Refiners 126

Natural Gasoline Manufacture 127

Refinery and Crude Prices 128-129

Tank Wagon Quotations 130

Technical Questions Answered 134
By Dr. C. K. Francis

Of Interest to Sales Departments 143

Consider Disposal of Crankcase Oil 144
By Charles E. Kern
District of Columbia investigation indicates lubricants can be reclaimed.

ARTICLES OF GENERAL INTEREST

The Advertisers' Index 29

Men Known in Oildom and Personals 66

Natural Gas Developments 69

Equipment and Supplies 95

Pipe Ordered by Roxana Corporation 105
By B. E. V. Luty

Classified Want Advertisements 120-121

Oil Securities Market 132-133

Recent Patents 166

Crude Petroleum Statistics 170

BE A REGULAR READER

The OIL and GAS JOURNAL Tulsa, Okla.

You are hereby directed to mail The Oil and Gas Journal to me for.....year. Enclosed find remittance $.....

Classify my interests as checked by me.

.....Producing .....Refining

.....Equipment .....Marketing

Name.....

Address.....

City.....

$6 a Year

$3 6 Months

Refinery Section Starts on Page 122

Crude Oil Situation Appears Brighter

Highest daily average estimated total production in 1927, week ended July 30, 2,587,105 bbls. Lowest in 1927, Jan. 22, 2,360,789 bbls.

Plan to Prevent Waste at Santa Fe Springs Important Factor. Higher Prices Justified by Conditions

By Andrew M. Rowley

Highest daily average estimated light oil production in 1927, week ended July 30, 2,102,385 bbls. Lowest in 1927, Jan. 1, 1,790,729 bbls.

With definite steps being taken to control the expected flush production from the Santa Fe Springs Field in California and indications the Hendricks Pool in West Texas is no longer a menace to the general situation, conditions throughout the industry are becoming more stabilized. A continued big demand for high gravity sweet crudes with the production of this quality of oil on the downward trend strengthens the belief higher prices are warranted and justified by conditions. Operators feel the law of supply and demand will force an upward revision of the crude oil price schedule within the very near future.

Of importance to the industry as a whole is the action in California where plans have been formulated for proration at Santa Fe Springs in order to prevent a vast waste of natural gas. These plans will be presented to operators on Friday of this week for ratification and indications are the State will aid in the conservation movement. Such a plan will prevent a flood of crude from being produced in an uneconomical manner coincident with the loss of millions of feet of natural gas daily.

The encroachment of water in the Hendricks Pool, Winkler County, Texas, is a factor of paramount importance in any consideration there relating to increasing the allowed production and the latest gauge taken of the pool shows the potential is declining. Oklahoma continues to register a decrease in output and this condition probably will continue during the remainder of this year.

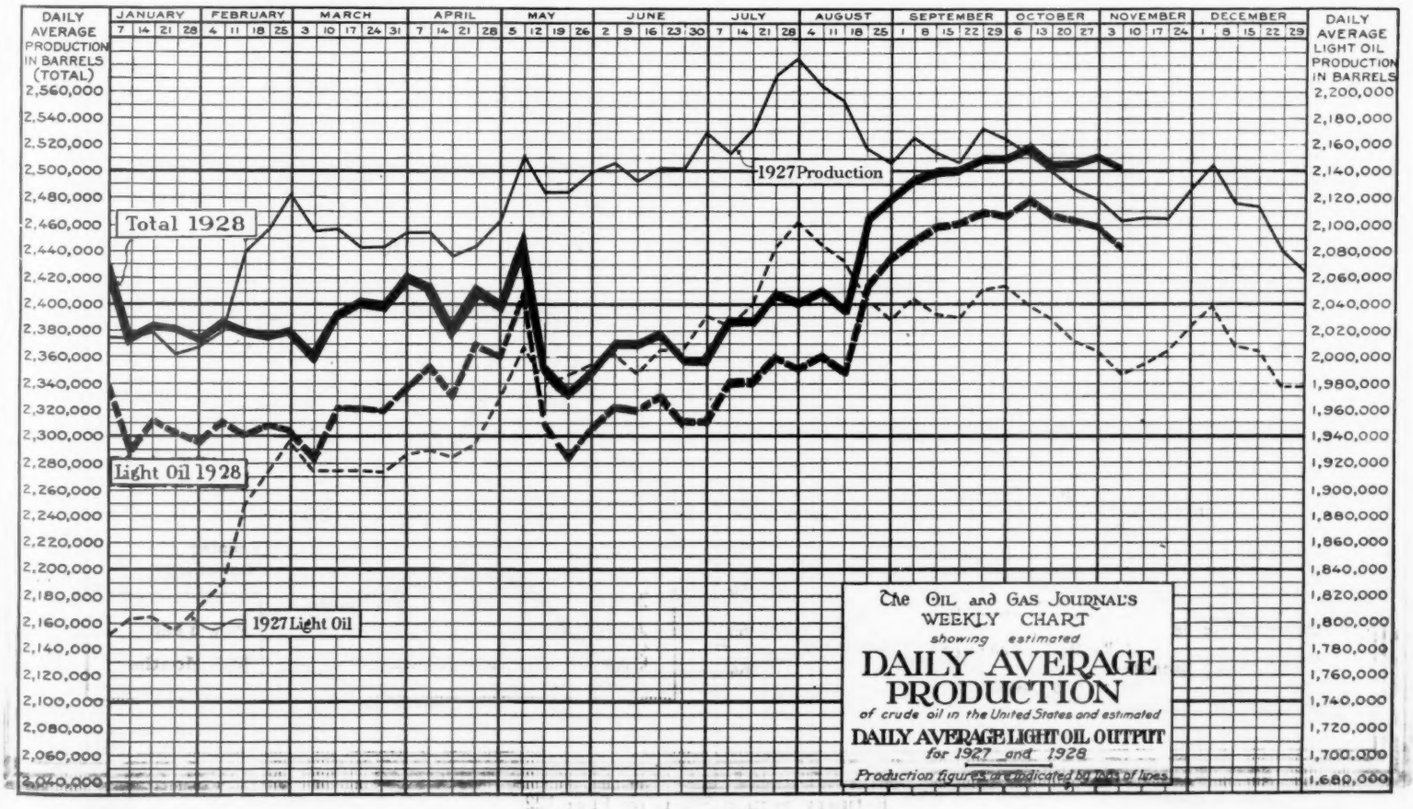
Taken as a whole, the situation appears brighter now than for a long time past. Operators who have co-operated to the fullest extent of their ability to produce crude oil in a conservative manner, prevent waste, and avoid a flooding of the market with the output from flush areas, feel conditions now warrant higher prices. With the smaller refineries having difficulty in contracting for crude supplies for the future, it seems the large purchasers will be confronted very soon with the necessity of increasing prices.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity oil in the United States for week ended November 3, and a comparison with the previous week follows:

	Nov. 3		Oct. 27	
	Light	Heavy	Light	Heavy
Oklahoma—				
Tonkawa	11,865	.....	11,905	.....
Burbank	26,515	.....	27,0f0	.....
Other Osage Fields	26,480	.....	26,520	.....
St. Louis-Pearson	127,070	.....	128,215	.....
Cushing and Shamrock	20,110	.....	20,165	.....
Bristow	20,660	.....	20,685	.....
Allen	23,320	.....	23,345	.....
Seminole	302,520	.....	313,310	.....
Northern Miscellaneous	110,215	.....	110,190	.....
Southern Fields	56,785	.....	57,040	.....
Total Oklahoma	725,540	.....	738,385	.....
West Texas—				
Hendricks	145,021	.....	144,230	.....
Yates	69,952	.....	73,620	.....
Remainder	115,815	.....	115,001	.....
Total West Texas	330,788	.....	332,851	.....
North Louisiana	32,045	6,140	32,245	6,300
Arkansas	28,555	54,725	28,225	55,040
North Central Texas	143,172	.....	143,854	.....
Texas Panhandle	67,905	.....	68,480	.....
East Central Texas	21,834	.....	22,926	.....
Kansas	96,960	.....	97,315	.....
Total Mid-Continent Area	1,446,799	60,865	1,464,281	61,340
Gulf Coast	.....	136,285	.....	133,787
Southwest Texas	.....	28,788	.....	29,020
Eastern	116,000	.....	113,500	.....
Rocky Mountain Area	82,459	.....	85,450	.....
California—				
Santa Fe Springs	40,000	.....	38,000	.....
Long Beach	189,000	.....	190,000	.....
Torrance	2,000	14,000	2,000	14,250
Huntington Beach	51,500	.....	51,750	.....
Dominguez	10,250	.....	10,500	.....
Inglewood	16,500	10,500	16,500	10,500
Ventura Avenue	53,000	.....	53,000	.....
Seal Beach	25,000	.....	25,000	.....
Remainder of State	53,000	168,250	54,000	160,500
Total California	440,250	192,750	440,750	185,250
Total United States	2,085,508	418,688	2,103,981	409,397
Grand Total		2,504,196		2,513,378

Total Decrease, 9,182 Bbls.; Light Oil Decrease, 18,473 Bbls.



Oklahoma Gasoline Prices Unchanged

Natural Gasoline Lower. Kerosene Weaker. Gas Oil and Fuel Oil Stationary. Lubs Revised Downward

By W. T. Ziegenhain

The Oklahoma refined oil market passed through a rather uneventful week with prices showing a tendency to decline further. Gasoline was plentiful at all times and while the larger refiners have maintained a well defined market for their material at 9½ cents, the price established a week ago, the supply of 9¼-cent and even 9-cent U. S. Motor gasoline is increasing. Consumption has been well up to expectations but refinery crude runs have also been maintained at a high figure and those refiners not choosing to store a portion of their production seem obligated to take from a quarter to a half cent below the general market for their material if it is to move constantly. Natural gasoline prices declined also and there was a persistent belief among manufacturers that still lower prices were in store over the immediate future. Refiners are not buying any more natural gasoline than needed to blend their day to day shipments and with less than a normal amount of export buying on the spot market, prices seem due for a slight recession over the next few months. This, of course, is largely dependent upon the course taken by the refinery gasoline market but these prices are also expected to make a slight recession as the lesser consuming season is felt. Only a crude advance promises to alter this trend.

Kerosene Plentiful

Kerosene was plentiful at all times during the week and prices extended over a wide range. North Texas kerosene undersold the Oklahoma material by a substantial margin and the Texas production promises to continue to hold prices near their present level, at least until relief is offered by export buyers. Several export inquiries have been received and two small export sales were made during the week but this business did not bolster prices.

Gas oil and fuel oil showed no change in their position. Both were freely offered and some very low priced sales were made from West Texas points indicating the situation there has not improved with the increased fall demand. As long as crude runs are maintained at their present level it seems certain that fuel stocks will continue to be added to instead of drawn upon for several months into the future at least. Within that time refiners will increase their cracking charges of fuel oil wherever possible and some new units are planned but the effect of these changes will come slowly.

The Mid-Continent lubricating oil market showed additional evidence of its weak position as prices were reduced by several of the larger manufacturers. The giving of price concessions over the past two months has been a forerunner of this move and quotations covered a very wide range, depending upon the quantity to be purchased. Through the revision of the list of prices this practice will probably be eliminated. Wax showed no change, the general belief being that prices will remain near their present position for the balance of the year. The statistical position of the wax market is excellent but prices are already so high that consumers are curtailing their use of it where possible. A German wax, a product of petroleum and also made by the distillation of lignite, is finding a wider market in the United States as a result of the present high prices and while the imports are comparatively small in this country, it is replacing some of our wax abroad. With winter temperatures favoring the increased production of wax, it is likely prices will not continue in their trend upward.

Gasoline and Naphtha

There was very little change in the gasoline prices over the week, practically all of the larger refiners having reduced their prices a week ago. The smaller plants were not selling below the 9-cent price. Those refiners who are not able to move all of their production at the

(Continued on Page 138)

REFINED MARKET BAROMETER

Gasoline prices continued in their downward trend in practically all refining sections, but the recession has been well controlled at all times. East Coast refiners were led in their decline by the Standard Oil Co. a week ago, while others met the lower quotations during the week. Kerosene continues to be offered freely and new price reductions were made in the Mid-Continent. Natural gasoline showed an added weakness in the Mid-Continent, while the California market remained unchanged. The lubricating oil market was not uniform, a slight strengthening being apparent in the East, with lower prices posted in the Mid-Continent. Wax remains unchanged.

Atlantic Seaboard—Lower gasoline prices and a slight upward revision of prices on lubricating oils constituted the principal changes in this market. Exports were less than during the previous months. The cooler weather has aided in strengthening the kerosene market, but prices remain unchanged.

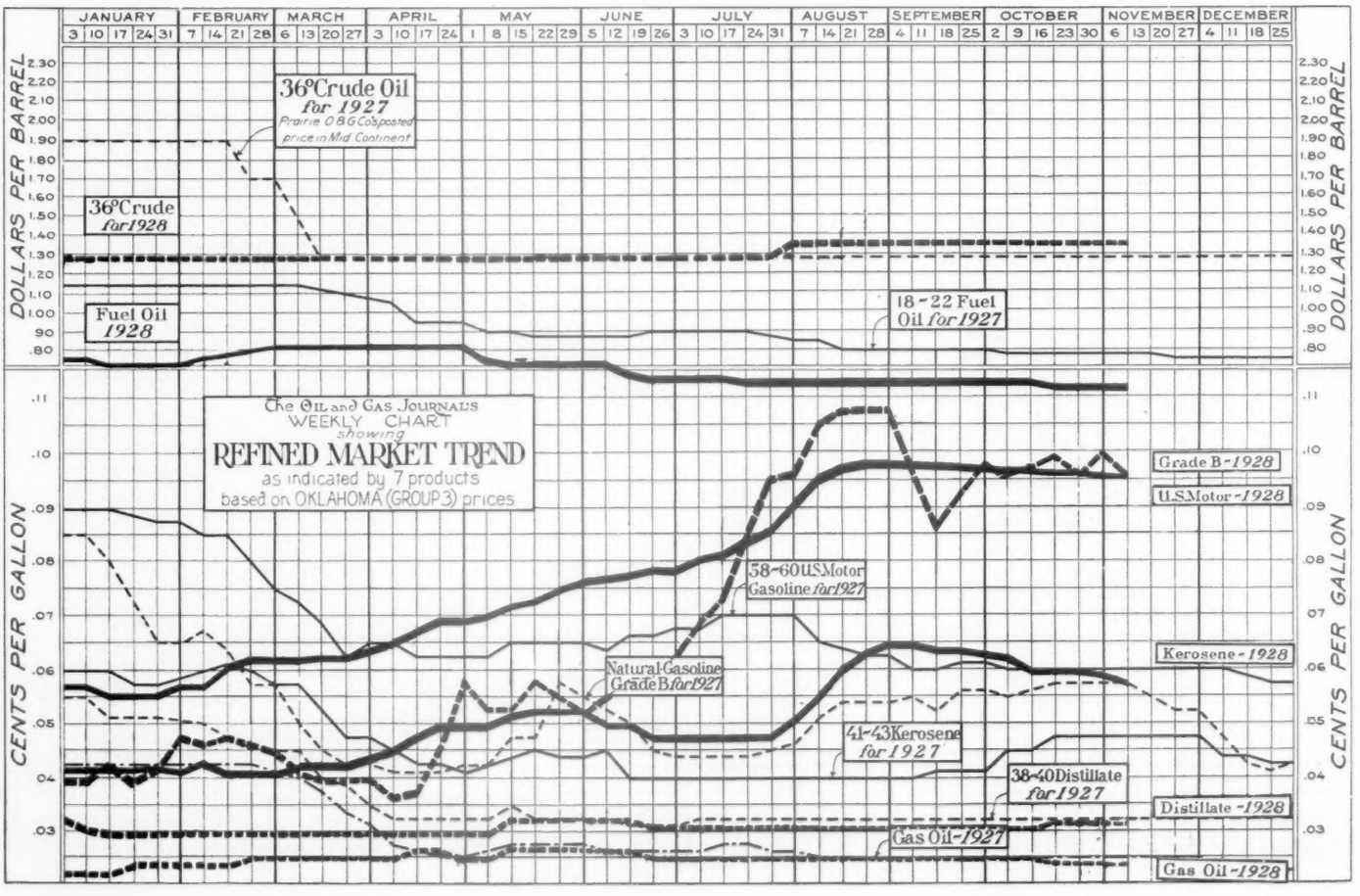
Mid-Continent—Natural gasoline prices declined to the level of the refinery gasoline price, and this represents the major change in the entire market. Lubricating oils were also quoted at a lower figure by the larger refiners, but material had been available at these lower prices for more than a month on the larger orders. Fuel oil and gas oil remain plentiful with prices unchanged. Wax has been halted in its trend upward.

Chicago—The spot demand for gasoline has been light, but prices remained unchanged. Gas oil sales increased as new contracts were closed for future deliveries, but the price showed no tendency to advance due to the heavy stocks being carried.

Pennsylvania—All products were being actively traded, but there is no thought of higher prices. Cylinder stock holds the strongest position in the list of lubricating oils.

California—There were no changes in the California market.

Gulf Coast—Lubricating oil prices showed a tendency to weaken further, despite consistent export buying. The balance of the market has not changed.



Plan Proration for Santa Fe Springs

Conservation of Natural Gas Is Basis of Method to Be Acted on by Operators This Week. Committee to Be in Charge

By L. P. Stockman

LOS ANGELES, Calif., Nov. 5.—The outstanding developments in California during the past week were the ratification of a proposal to prorate future production of crude oil at Santa Fe Springs in order to conserve natural gas if necessity demanded; the completion of another large flowing well in the Buckbee zone, and the successful capping of George Getty's wild gasser, No. 17 Nordstrum, which has been burning continuously out of control for seven weeks. All three of these events were of paramount importance and the current week will witness a further materialization of developments of outstanding interest. The gas conservation program, which contemplates the use of excess natural gas for repressuring work and storage in the Meyer zone at Santa Fe Springs, has not yet been presented to operators for ratification, but this formality will be the first order of business when the operators' committee reassembles next Friday. This matter came up for preliminary discussion at last Friday's meeting.

The completed plan to be presented to operators for ratification next Friday contemplates the organization of a duly incorporated mutual concern with each operator in the Santa Fe Springs Field as a stockholder. Recent study has indicated that the excess natural gas resulting from deep zone exploitations will exceed preliminary estimates and the original plan has consequently been elaborated upon with the result that it is the present intention to utilize two zones at Santa Fe Springs for storage of natural gas instead of one. The Meyer horizone, which immediately overlies the Buckbee zone, now under development, will be the principal benefactor of the proposed gas conservation program because of its areal extent and thickness of oil sand. The shallow Foix zone, however, also offers exceptional inducements for satisfactory gas storage and experimentation is already well under way to determine the feasibility of utilizing this horizon in conjunction with the Meyer. The Foix zone was never very productive and is consequently quite depleted at present. It offers an excellent zone for the storage of natural gas, however, because there are less than 10 wells producing from this sand. It is the present intention to kill these wells and utilize them as receivers for natural gas if practicable. The advantage of this plan is quite obvious, as the zone will be sealed against future production.

Back Pressuring

The proposal to prorate crude oil production at Santa Fe Springs was presented to the operators' general committee last Friday in the form of a resolution which called attention to the necessity of artificial curtailment and commented on well-established oil field factors of flowing wells against back pressure controlled by flow plugs or beans. The inherent energy of natural gas in bringing oil to the well for production and its function of decreasing the viscosity of oil was also stressed. After considerable discussion the committee recommended that a uniform practice of back pressuring be adopted in all wells at Santa Fe Springs for the purpose of conserving natural gas and reducing the amount of gas concurrently produced so as to meet Governor Young's demand for elimination of waste. In order to accomplish this purpose all new wells must be produced through tubing and all subsequent completions must be equipped with high pressure casingheads and fittings capable of withstanding 2,000 pounds or better.

No definite time has been set for the initiation on the projected proration plan but it will be put into effect as soon as gas production at Santa Fe Springs exceeds the usages in the field, the demands of gas companies, and the demands for repressuring and storage projects and an actual surplus exists. Each flowing well producing from below the Meyer zone will be pinched back by a percentage on its net oil production to be set by a committee not yet appointed. Each new well brought in from zones below the Meyer horizon will be permitted to produce normally for 15 days and will thereafter be pinched in at the end of this time limit to the percentage cut then in effect throughout the field. The percentage will be applied on the production of all new wells based on the last five days of the 15-day production test.

As soon as each individual operator in the Santa Fe Springs Field ratifies this proration plan a control committee will be appointed immediately and it will issue instructions as to how and when to carry out the proposed cut. This conservation program will continue in effect for six months from the date to be set by the control committee for the beginning of the curtailment, but if this committee is of the opinion that an emergency will still exist at the end of this first six months' period, operators will be notified 30 days before its expiration in order that the curtailment period may be prolonged.

Winkler Potential Production Cut

Increase in Allowance Likely to Hasten Encroachment of Water. Suggestion Single Order May Cover Whole Permian Basin

By James H. Dameron

FORT WORTH, Tex., Nov. 5.—Proration gauges for Winkler County for the new 15-day period show the county to be losing in potential production at a time when many students of the crude situation in West Texas looked for an increase in the allowable production of the Hendricks Pool to care for additional pipe line outlet. The loss in potential production is another indication that Hendricks has reached its crest in potential.

Loss in potential will not have any great bearing on increasing the allowed production a few thousand barrels at this time, but it is generally believed the reduction of back pressure on the wells will hasten the encroachment of water.

At the present time three pipe line projects are under way that will add approximately 135,000 bbls. additional pipe line outlet to West Texas. Atlantic Pipe Line Co. is nearing completion on its 35,000-bbl. carrier to Port Arthur. R. W. Howe, head of the company, expects the line to be completed by the middle of December.

Texas Pipe Line Co. is building a main line system from West Texas to the coast that will have a capacity ranging between 50,000 and 60,000 bbls. daily. It will be fed by lines reaching into most of the major producing areas. Shell Pipe Line Corp., which is gathering crude in the major pools and has a main line running north to Oklahoma, is building its second trunk system. The second line will terminate on the Gulf Coast.

Completion of these two lines, probably by early spring, will probably mean the raising of allowed production considerably in each of the three restricted areas in West Texas.

Railroads in West Texas are moving around 50,000 bbls. of crude daily and the West Texas refineries are taking around 35,000 bbls. daily. The fact that the runs to storage range from 25,000 to 36,000 bbls. daily indicates to many the production limit is soon to be raised. Contracts for West Texas crude are more difficult to obtain now than at any time during the crude flood period.

Howard County Raised

Last week the Railroad Commission added 5,000 bbls. to the allowed production of southern Howard County. This was to take care of the Henshaw Oil Corp.'s producer 3 miles west of the Dora Roberts Pool in Howard County. Oil from that well is higher in gravity than crude from other Howard County wells and is producing from a new horizon. Cosden & Co. are running the crude and are reported to be paying 80 cents per barrel.

Proration has held back a flood of crude from the Permian Basin and it is not expected the bars will be let down for a long time. Instead, the problem grows more complex. Two new areas in Winkler County are expected to develop another problem in that country's proration plan and a wildcat well in Ward County now showing oil may lead to development that will require proration in that county.

Some officials who have been prime movers in West Texas proration plans are giving serious thought to the best plans of holding that territory's production to market requirements. At the present time the three restricted areas are governed by three separate proration orders issued by the Railroad Commission.

Single Order Suggested

Inasmuch as the pipe line outlet reaches into every producing area it has been suggested that a single order may be made to embrace all of the Permian Basin and allow each pool its share of pipe line outlet on a different basis from the present basis.

Winkler County now has a potential production of 2,771,848 bbls. and an allowed production of 150,000 bbls. daily. Yates has a far greater potential production, almost twice as much as Winkler County, and an allowed production of 72,500 bbls.

In those two pools the allowed production was decided by committees representing the operators in the separate pools. But some students of the problems in West Texas are looking ahead to the time when a change may be made to allocate the production of each pool on a different basis.

Winkler County dropped 26,286 bbls. in potential production to 2,771,848 bbls.

(Continued on Page 139)

Below are given the proration figures by companies for both the Hendricks and Yates Pools.

HENDRICKS POOL ALLOWABLE PRODUCTION BY COMPANIES
Effective November 1 through November 15

Company—	Wells	Units	Potential prod.	Allowed prod.
Amerada Pet. Corp.	1	1	3,128	504
Atlantic O. P. Co.	27	12	150,770	9,109
Atlantic & Kesslar & Logan	1	1	7,592	624
Atlantic & Collett	12	4	201,158	7,119
Bankers Prod. Corp.	1	⅛	4,451	172
California Co.	8	2	19,500	1,366
Cranfill & Reynolds	8	2½	71,535	2,982
Eastland Oil Co.	2	1	1,008	446
Empire G. & F	1	1	1,800	468
Gulf Prod. Co.	27	12	331,062	13,987
Humble O. & R. Co.	32	14	132,372	9,447
Independent O. & G. Co.	17	8½	58,802	5,152
Magnolia Pet. Co.	8	2	1,792	886
Marland Oil Co.	6	3	28,186	2,018
Murchison & Cranfill	7	2¼	23,784	1,586
Murchison & T. P. Lee	1	⅛	13,848	584
Mining & Eng. Corp.	1	¼	2,508	173
Prairie O. & G. Co.	5	2	86,128	3,168
Pure Oil Co.	30	12	303,440	13,238
Republic Prod. Co.	12	5½	71,834	4,177
Roxana Pet. Corp.	34	15	287,901	14,074
Roxana-The Texas Company	39	16	334,353	15,749
Richardson, Kelsey and others	1	1	768	440
Skelly Oil Co.	12	4	286,733	9,435
Southern Crude	90	50⅜	324,605	29,883
Texon O. & L. Co.	10	4	22,090	2,274
Winkler O. P. Corp.	1	⅛	700	124
Grand total	394	177	2,771,848	149,185

YATES POOL ALLOWABLE PRODUCTION BY COMPANIES
Effective November 1 through November 15

Company—	Wells	Units	Average potential prod.	Prod. quota
California Co.	38	21	273,363	9,120
Cosby and others	1	1	1,969	618
Dixie Oil Co.	1	1	25	121
Grayburg Oil Co.	3	1	150	122
Gulf Prod. Co.	34	23	285,322	9,666
Humble Oil & Refining Co.	15	10	35,017	2,045
Kirby Pet. Co.	1	1	70	122
Kirby & Edson	1	1	472	131
McMan Oil & Gas Co.	10	8.8	55,279	2,404
McMan & Marland	17	7	102,608	3,318
Marland Oil Co.	10	2	14,466	590
Matador Oil Co.	2	1	9,816	958
Mid-Kansas & Transcontinental	96	51.3	1,133,116	33,636
A. L. Hawse and others (was Oil Operators Trust)	7	1	2,143	172
Phillips Pet. Co.	1	1	125	123
Red Bank Oil Co.	4	1	1,094	146
Roxana Pet. Co.	24	12.4	83,732	3,819
Savoy & Mazda	3	1	2,443	629
Simms Oil Co.	7	4	170,946	4,606
Skelly Oil Co.	1	1	150	124
Grand totals	276	150.5	2,172,306	72,500

Mid-Continent Refinery Runs High

Exceeded Only by September Record. Total for November 550,000 Bbls. Four Plants Resume Operations

By W. T. Ziegenhain

Mid-Continent refinery crude runs continue to be maintained at a high figure and slight increases are shown in all sections except Kansas. The total of 550,000 bbls. for November has been exceeded only by those of September, when 563,270 bbls. were run daily, the highest in the history of the Mid-Continent. Much of the gradual increase shown for the year has been due to the starting up of small plants, and during November four more plants will resume operation. With the addition of these plants the total number of refineries has been increased to 138 for the Mid-Continent and the number of operating plants has been increased to 129. Included in the list of plants to resume operations are the Hutchinson Oil Refining Co.'s plant in Hutchinson, Kans., the Wilhoit Refining Co.'s plant at Joplin, Mo., the Wilcox Oil & Gas Co.'s refinery at Bristow, Okla., and the Walters Refining Co.'s plant at Walters, Okla. These have a combined capacity of 5,000 bbls., but improvements are planned for several of them to increase this to 7,000 bbls. Partially offsetting the increase in the number of plants, the Superior Oil Co. shut down its refinery at Odessa, in the West Texas area, the plant having operated for only a short time.

Oklahoma

With the total crude runs at practically the same figure as last month, very little change is also shown in the operation of the individual plants. The small increase is due entirely to the starting up of the Wilcox Oil & Gas Co.'s refinery and the Walters Refining Co.'s plant. Each of these plants have a capacity of 1,000 bbls.

Kansas

Although two Kansas plants resumed operations, the crude runs for this section show a reduction. This is largely accounted for by the reduction of 2,000 bbls. in the Roxana runs and 1,300 bbls. in the Skelly Oil Co.'s runs. A. Frederickson, president of the Hutchinson Oil Refining Co., which resumed operations on the first of the month, announced he is also making improvements at the plant and adding a Trumble cracking unit, the operation of which is expected to start in a few months.

North Central Texas

The crude runs for this section also showed very little change, the increase amounting to only 400 bbls. The principal change in this group is the purchase of the Amarillo Refining Co.'s plant at Amarillo, Tex., by The Texas Company on November 1 and the announcement that improvements would be made at the plant to increase its skimming and cracking capacity.

RUNS TO STILLS AT MID-CONTINENT REFINERIES

1926	
September 1	419,995
October 1	408,975
November 1	417,575
December 1	403,450
1927	
January 1	403,625
February 1	418,595
March 1	418,920
April 1	401,860
May 1	407,355
June 1	426,170
July 1	428,075
August 1	457,800
September 1	422,150
October 1	420,955
November 1	426,654
December 1	417,455
1928	
January 1	415,125
February 1	418,275
March 1	427,145
April 1	451,225
May 1	479,225
June 1	487,135
July 1	506,310
August 1	543,625
September 1	563,270
October 1	547,820
November 1	550,000

West Texas

The sale of the Amarillo Refining Co.'s plant at Amarillo by Reese Allen to The Texas Company was soon followed by the announcement Mr. Allen would build a plant at Big Spring. Construction work is already well under way there and when completed will have a capacity of 5,000 bbls. G. L. Rowsey, formerly superintendent of the Amarillo Refining Co.'s plant, will be superintendent of the new plant and is now supervising the construction work there.

Crude runs in several of the West Texas plants showed a reduction, but this was offset by increases in others. For a short period during November, the Humble Oil & Refining Co. at McCamey expects to curtail its runs in order to complete the installation of several cracking units.

North Louisiana and Arkansas

Refinery crude runs in this section show practically no change. All plants are operating near their schedule of last month, the increase in some plants being offset by decreases in others.

MID-CONTINENT REFINERY OPERATIONS

(Based on Operations November 1, 1928, and October 1, 1928)

Districts—	No. of plants Nov. 1	Daily crude cap. Nov. 1 (bbls.)	Daily crack. cap. Nov. 1 (bbls.)	Plants oper. Nov. 1	Runs to stills Nov. 1 (bbls.)	Plants oper. Oct. 1	Runs to stills Oct. 1 (bbls.)
Arkansas	8	38,800	9,700	8	28,200	8	27,950
Kansas	19	136,500	68,800	17	99,900	15	102,300
North Louisiana	6	55,700	16,800	6	45,700	6	44,250
Oklahoma	48	292,200	103,550	45	210,000	43	208,350
North and Central Texas	36	159,700	25,200	33	107,150	33	105,750
West Texas	21	89,250	2,000	20	59,050	21	58,220
Total	138	772,150	266,050	129	550,000	126	546,820

REFINERY OPERATIONS IN OKLAHOMA

(Plants which have been in operation during the past year)

Name and location—	Daily capacity	Runs Nov. 1	Runs Oct. 1
Anderson-Prichard Oil Corp., Cyril	2,500	2,000	1,800
Barnsdall Refineries, Inc., Barnsdall	6,000	3,500	3,500
Barnsdall Refineries, Inc., Okmulgee	10,000	3,000	4,000
Bell Oil & Gas Co., Grandfield	4,500	2,100	2,100
Bolene Refining Co., Enid	5,000	4,000	4,000
Canfield Refining Co., Yale	400	(*)	(*)
Champlin Refining Co., Enid	16,000	13,000	13,000
Continental Oil Co., Sapulpa	10,000	4,000	4,000
Cushing Refining & Gasoline Co., Blackwell	1,800	1,700	1,700
Cushing Refining & Gasoline Co., Cushing	3,500	2,300	2,300
Empire Oil & Refining Co., Cushing	5,000	4,700	4,700
Empire Oil & Refining Co., Okmulgee	4,000	4,000	4,000
Empire Oil & Refining Co., Ponca City	7,500	7,500	7,500
Garber Refineries, Inc., Garber	3,500	3,300	3,300
Gilmer Oil Co., Ringling	3,000	1,100	1,200
Globe Oil & Refining Co., Blackwell	7,500	5,000	5,000
Globe Oil & Refining Co., Cushing	8,000	8,000	8,000
Illinois Oil Co., Cushing	3,000	2,100	2,200
Imperial Refining Co., Ardmore	5,000	2,000	2,000
Independent Oil & Gas Co., Okmulgee	5,000	3,300	3,300
Intercean Refining Co., Bristow	4,000	(*)	(*)
Johnson Oil Refining Co., Cleveland	6,000	5,800	5,800
Marland Refining Co., Ponca City	30,000	18,000	18,000
Mid-Continent Petroleum Corp., West Tulsa	40,000	25,000	25,000
Northwestern Refining Co., Tonkawa	2,500	3,000	3,000
Oil State Refining Co., Allen	1,500	1,200	300
Peppers Gasoline Co., Covington	1,000	800	850
Pierce Oil Corp., Sand Springs	8,000	7,200	7,200
Producers Oil Co., Bristow	2,500	800	800
Producers & Refiners Corp., West Tulsa	6,000	3,200	3,200
Pure Oil Co., Ardmore	5,000	2,000	2,000
Pure Oil Co., Muskogee	9,000	7,000	7,000
Rock Island Refining Co., Beckett	2,500	1,800	1,800
Sayre Oil & Refining Co., Sayre	500	(*)	(*)
Shaffer Oil & Refining Co., Cushing	10,000	10,000	10,000
Sun Oil Co., Yale	5,000	4,800	4,900
Sinclair Refining Co., Muskogee	1,000	600	600
The Texas Company, West Tulsa	15,000	13,500	13,700
Texas Pacific Coal & Oil Co., Wynnewood	2,500	2,000	2,000
Tidal Refining Co., Drumright	10,000	10,000	10,000
Transcontinental Oil Co., Boynton	2,500	2,000	2,000
Transcontinental Oil Co., Bristow	5,000	4,500	4,500
Walters Refining Corp., Walters	1,000	1,000	(*)
Western Oil Corp., Beckett	2,000	1,200	1,200
White Oak Refining Co., Allen	3,000	2,500	2,500
Wilcox Oil & Gas Co., Bristow	1,000	1,000	(*)
Wirt Frankin Petroleum Corp., Ardmore	4,000	2,500	2,400
Yale Oil Corp., Yale	1,500	1,000	1,000
Total	292,200	210,000	208,350

*Shut down.

REFINERY OPERATIONS IN KANSAS

(Plants which have been in operation during the past year)

Name and location—	Daily capacity	Runs Nov. 1	Runs Oct. 1
Barnsdall Refineries, Inc., Wichita	4,000	2,500	3,000
Derby Oil Co., Wichita	6,000	4,000	3,500
Derby Oil Co., Russell	2,500	(*)	(*)
Eldorado Refining Co., Eldorado	3,500	2,200	2,500
Golden Rule Refining Co., Wichita	1,500	1,000	1,000
Hutchinson Oil Refining Co., Hutchinson	1,500	1,000	(*)
Kanotex Refining Co., Arkansas City	10,000	5,500	6,000
Manhattan Oil Co., Kansas City	6,000	5,000	5,300
Miller Petroleum Co., Humboldt	2,000	(*)	(*)
National Refining Co., Coffeyville	6,500	6,000	6,000
Peerless Oil Refining Co., Chanute	3,000	2,200	2,200
Roxana Petroleum Corp., Arkansas City	22,000	20,000	22,000
Sinclair Refining Co., Coffeyville	10,000	9,500	9,500
Sinclair Refining Co., Argentine	9,500	8,500	8,500
Skelly Oil Co., Eldorado	23,000	12,000	13,300
Standard Oil Co. of Kansas, Neodesha	12,000	10,000	10,500
Vickers Petroleum Co., Potwin	3,500	2,000	2,000
White Eagle Oil & Refining Co., Augusta	10,000	8,000	7,000
Wilhoit Refining Co., Joplin, Mo.	1,500	500	(*)
Total	136,500	99,900	102,300

*Shut down.

REFINERY OPERATIONS IN NORTH CENTRAL TEXAS

(Plants which have been in operation during the past year)

Name and location—	Daily capacity	Runs Nov. 1	Runs Oct. 1
Amarillo Producers & Refiners Corp., Isom	2,000	1,250	1,250
American Refining Properties, Wichita Falls	6,000	4,000	4,000
Continental Oil Co., Wichita Falls	6,000	4,000	4,000
Dale Oil & Refining Co., Electra	2,500	2,200	2,000
Empire Oil & Refining Co., Gainesville	5,000	3,600	3,600
Falls Refining Co., Wichita Falls	1,500	500	1,000
Gulf Refining Co., Fort Worth	10,000	8,000	7,500
Hagaman Refining Co., Tiffin	2,000	250	250
Iowa Park Producing & Refining Co., Iowa Park	2,500	2,000	1,400
Kent-Middleton Refining Co., Angus	4,000	2,200	2,200
Kent-Macmillan Refining Co., Minerva	2,000	900	900
Macmillan Petroleum Co., Isom	6,500	6,800	6,500
Magnolia Petroleum Co., Fort Worth	12,000	8,000	8,000
Magnolia Petroleum Co., Corsicana	5,000	3,400	3,400
Noble Oil & Gas Co., Burkburnett	3,500	3,000	3,000
Olney Oil & Refining Co., Olney	2,000	1,000	1,400
Oriental Refining Co., Dallas	5,000	(*)	(*)
Oriental Refining Co., (Trinity), Dallas†	5,000	3,000	3,000
Orient Petroleum Co., Wichita Falls	2,500	1,300	1,200
Panhandle Refining Co., Wichita Falls	5,000	4,500	4,200
Pampa Refining Co., Pampa	4,000	2,500	2,500
Phillips Petroleum Co., Isom	7,500	7,000	7,100
Primrose Refining Co., Wichita Falls	2,500	1,500	1,500
Primtex Refining Co., Grand Prairie	2,500	750	750
Simms Oil Co., Dallas	5,000	4,200	4,000
Star Refining & Producing Co., Fort Worth	1,800	400	1,000
Swastika Refining Co., Muenster	1,000	(*)	(*)
Taxman Refining Co., Wichita Falls	2,500	1,700	1,800
The Texas Company, Dallas	15,000	12,500	14,500
The Texas Company, Amarillo	6,000	4,000	2,500
Tidal Western Refining Co., Burkburnett	3,000	2,000	2,000
Texas Pacific Coal & Oil Co., Fort Worth	3,000	2,000	2,800
Transcontinental Oil Co., Fort Worth	5,000	3,500	3,000
Waggoner Refining Co., Electra	3,400	2,400	2,500
Western Oil Corp., Wichita Falls	1,500	(*)	(*)
White Eagle Oil & Refining Co., Fort Worth	6,000	2,500	2,000
Total	159,700	107,150	106,750

*Shut down. †Operated by Magnolia Petroleum Co.

REFINERY OPERATIONS IN WEST TEXAS

(Plants which have been in operation during the past year)

Name and location—	Daily capacity	Runs Nov. 1	Runs Oct. 1
Amarillo Producers & Refiners Corp., Pyote	3,000	1,700	1,500
Big Spring Refining Co., Big Spring	2,500	1,500	2,100
Bluebonnet Oil Refining Co., Wickett	5,000	4,000	4,500
Central Texas Refining Co., Brownwood	1,250	500	520
Col-Tex Refining Co., Colorado	10,000	7,500	8,000
Grayburg Oil Co., San Antonio	6,000	2,200	2,200
Humble Oil & Refining Co., San Antonio	5,000	3,000	4,500
Humble Oil & Refining Co., McCamey	20,000	16,000	11,000
Misko Refineries, Inc., Laredo	1,500	500	500
Midland Refining Co., Midland	2,000	1,600	1,700
Pasotex Petroleum Co., El Paso	10,000	5,000	6,000
Pecos Valley Refining Co., Pyote	5,000	4,500	3,500
Pioneer Oil & Refining Co., Somerset	1,500	1,000	1,000
Rio Grande Oil Co., El Paso	3,000	2,800	2,800
San Angelo Refining Co., San Angelo	2,000	2,000	2,000
Superior Oil Co., Inc., Odessa	500	(*)	500
Sweetwater Oil & Refining Co., Sweetwater	2,000	500	750
Tonkawa Petroleum Co., Pyote	4,000	3,600	4,000
Texas Mexican Oil & Refining Co., Laredo	1,000	650	650

(Coninued on Page 91)

Geophysics Big Factor on Gulf Coast

During Past Four Years About 64 Domes Have Been Discovered Through Exploration With Different Instruments

By Neil Williams

HOUSTON, Tex., Nov. 5.—Just what the seismograph, torsion balance, geophone, magnetometer and other such instruments have done on the Gulf Coast since geophysical exploration first began in 1924 is indicated in a compilation which shows that they have led to the finding of 22 new salt domes and 32 additional prospective domes. Considering the fact that in all the time previous to 1924 only 39 domes were found, the discovery of 22 and possibly 64 new domes in the past four years of geophysical wildcatting stands out as a remarkable record.

The almost unbelievable number of domes discovered or checked since the advent of the instruments, and particularly the rapid order in which indications of new domes are being brought to light in recent weeks is recognized as one of the most important phases of Gulf Coast development since the discovery of the first oil field at Spindletop in 1901.

Operators feel every dome eventually will prove productive of oil at some place in the sands overlying or flanking it. Although this is more or less of a guess, the theoretical deduction from the opinion is that every dome found is a potential oil field. Whether the belief is true or not, operators so far in the years of drilling on the coast have not proved it otherwise as there is no unproductive dome today which has been completely drilled. Hockley, on which drilling has been underway for more than a quarter century without the discovery of oil possibly comes the nearest to disproving the opinion.

However, one of the important angles to the discovery of the many new domes, even if only a small percentage are productive, lies in the fact that every one will be drilled upon by at least one test and probably scores of others thus assuring that wildcatting is not a past number in Gulf Coast Field development.

Just what percentage of salt domes have proved productive is a question which has caused considerable interest among coastal operators. To date there

(Continued on Page 88)

TEXAS

Dome	County	Discovery Company	Year discovered	Proved by drlg.	Total wells or drlg.	No. oil wells	Prod. to date	Present drilling	Method of discovery
Allen	Brazoria	Roxana Petroleum Corp.	1925	Yes	10	3	16,475	2	Torsion balance
*Aldine	Harris	Humble Oil & Refining Co.	1928	No	None	0	0	0	Torsion balance
Almeda	Harris	Vacuum Oil Co.	1928	No	2	0	0	0	Seismograph
Ariola	Hardin	Gulf Production Co.	1928	No	0	0	0	0	Seismograph
Clemens	Brazoria	Roxana Petroleum Corp.	1925	Yes	..	0	0	1	Torsion balance
*Clear Lane	Brazoria	Alexander & Smith	1928	No	0	0	0	0	Torsion balance
*Clodine	Harris-Fort Bend	Independent	1928	No	Loc.	0	0	0	Torsion balance
DeWalt	Fort Bend	H. C. Cockburn, Humble O.&R.	1927	Yes	7	3	105,746	3	Torsion balance
*Dickinson	Galveston	Republic Producing Co.	1928	No	‡1	0	0	1	Torsion balance
Davis Hill	Liberty	Humble O. & R., The Texas Co.	1927	Yes	..	0	0	1	Torsion balance, seismograph
Fannette	Jefferson	Gulf Production Co.	1925	Yes	19	1	3,671	1	Seismograph
*Genoa	Harris	H. C. Cockburn	1928	No	0	0	0	0	Torsion balance
Hawkinsville	Matagorda	Gulf Production Co.	1925	Yes	20	0	0	0	Seismograph
Hankamer	Chambers	Gulf Production Co.	1928	No	0	0	0	0	Seismograph
Long Point	Fort Bend	Gulf Production Co.	1924	Yes	51	0	Showings	2	Torsion balance
Lost Lake	Chambers	Pure Oil Co.	1927	Yes	4	0	Showings	2	Geophone, seismograph
*Louise	Wharton	Independent	1928	No	0	0	0	0	Torsion balance
Moss Bluff	Liberty	Gulf Production Co.	1926	Yes	8	0	0	1	Geophone
Mykawa	Harris	H. C. Cockburn, Humble O.&R.	1928	No	‡0	0	0	1	Torsion balance
Nash	Fort Bend	Rycade Oil Co.	1924	Yes	45	22	1,101,499	2	Torsion balance
Neches (Duncan Woods)	Orange	Gulf Production Co.	1928	No	0	0	0	0	Seismograph
Needville	Fort Bend	Meyer, SoRolle	1928	No	‡1	0	0	1	Torsion balance
Orchard	Fort Bend	Gulf Production Co.	1924	Yes	18	3	158,286	2	Seismograph
Oakwood	Freestone	Roxana Petroleum	1927	No	2	0	0	0	Seismograph
†Shepherds Mountain	Matagorda	H. C. Cockburn	1928	No	0	0	0	0	Torsion balance
Smiths Point	Chambers	Gulf Production Co.	1928	No	0	0	0	0	Seismograph
San Felipe (Sealey)	Austin-Waller	Gulf Production Co.	1927	No	‡1	0	0	1	Torsion balance
Spear Survey	Orange	Gulf Production Co.	1928	No	0	0	0	0	Seismograph
*Strang	Harris	Humble-Gulf	1928	No	0	0	0	0	Torsion balance
Somerville	Washington	Sun Oil Co.	1927	No	7	1	2,000	2	Magnetometer

*Claimed as domes but not definitely checked.
†Old dome prospect but not checked until 1928.
‡First test drilling.

LOUISIANA

Dome	Parish	Discovery Company	Year discovered	Proved by drlg.	Total wells or drlg.	No. oil wells	Prod. to date	Present drilling	Method used
Bayou Blue	Iberville	Calcasieu Oil Co., Union S. Co.	1926	No	3	0	0	(Drk) 1	Seismograph
‡Bayou Bouillon	St. Martin	Rycade Oil Co.	1927	Yes	12	4	203,250	4	Seismograph, Torsion balance
Bayou Choctow	Iberville	Gulf Refining Co.	1927	No	None	0	0	0	Geophone
Bayou DeGlaise	Iberville	Calcasieu Oil Co., Union S. Co.	1927	No	3	0	0	Loc.	Seismograph
*Bayou DeLarge	Terrebonne	Louisiana Land & Expltn. Co.	1928	No	0	0	0	0	Seismograph
Bayou Henry	Iberville	Standard Oil Co., Union S. Co.	1927	No	0	0	0	0	Seismograph
Black Bayou	Cameron	Roxana Petroleum Corp.	1928	Yes	5	0	0	1	Seismograph
*Bay Batiste	Plaquemines	Louisiana Land & Expltn. Co.	1928	No	0	0	0	0	Geophone, seismograph
*Bayou LaFourche	LaFourche	Louisiana Land & Expltn. Co.	1928	No	0	0	0	0	Seismograph
*Bayou Little Caillon	Terrebonne	Louisiana Land & Expltn. Co.	1928	No	0	0	0	0	Seismograph
*Barataria Bay	Plaquemines	Louisiana Land & Expltn. Co.	1928	No	0	0	0	0	Seismograph
Calcasieu Lake	Cameron	Louisiana Land & Expltn. Co.	1927	Yes	2	0	0	1	Geophone
*Chenier Bayou	Plaquemines	Gulf Refining Co.	1928	No	0	0	0	0	Seismograph
*Caillou Lake	Terrebonne	Louisiana Land & Expltn. Co.	1928	No	0	0	0	0	Seismograph
Darrow	Ascension	Gulf Refining Co.	1927	No	0	0	0	0	Seismograph
East Hackberry	Cameron	Calcasieu Oil Co.	1927	Yes	37	21	801,550	2	Seismograph
†Egan	Acadia	Gulf Refg. Co., Calcasieu Oil Co.	1927	No	‡1	0	0	1	Seismograph
Grosse Tete	West Baton Rouge	Gulf Refining Co.	1927	No	‡1	0	0	0	Seismograph
*Lake Barre	Terrebonne	Louisiana Land & Expltn. Co.	1928	No	0	0	0	0	Geophone, seismograph
*Lake Salvadore	St. Charles	———	1928	No	0	0	0	0	Seismograph
Loreauville (Fausse)	Iberia	Gulf Refining Co.	1926	Yes	14	4	7,500	2	Seismograph
*Pelta Bay	Terrebonne	Louisiana Land & Expltn. Co.	1928	No	0	0	0	0	Geophone
*Olevier	St. Bernard	Gulf Refining Co.	1928	No	0	0	0	0	Seismograph
*Rose	Plaquemines	Gulf Refining Co.	1928	No	0	0	0	0	Seismograph
*Spanish Pass	Plaquemines	Gulf Refg. Co., Humble O.&R.	1928	No	0	0	0	0	Seismograph
*Terrebonne Bay	Terrebonne	Louisiana Land & Expltn. Co.	1928	No	0	0	0	0	Geophone, seismograph
Thiboduox (Lutcher)	LaFourche	Gulf Refining Co.	1927	Yes	7	0	0	1	Seismograph
*Timbolier Bay	Terrebonne	Louisiana Land & Expltn. Co.	1928	No	0	0	0	0	Geophone, seismograph
Napoleonville	Assumption	Gulf Refining Co.	1926	Yes	2	0	0	0	Seismograph
Port Barre	St. Landry	Gulf Refining Co.	1926	No	0	0	0	0	Geophone
Sorrento	Ascension	Gulf Refining Co.	1926	Yes	10	3	240,000	1	Seismograph
Starks	Calcasieu	Gulf-Standard	1925	Yes	21	5	435,284	3	Seismograph
Vermillion Bay	Iberia	Louisiana Land & Expltn. Co.	1927	Yes	3	0	0	1	Geophone
White Castle	Iberville	Roxana Petroleum Corp.	1925	Yes	2	0	Showings	0	Seismograph

*Very recent discoveries and names represent nearest waterway, plantation or town.
†Slight indication of dome.
‡Dome known before 1924 but not checked definitely by geophysical instruments until 1927.
‖First test drilling.

Automatic Flowing of Small Wells

Extensive Field Experiments Conducted by Large Company to Lower Lifting Costs and to Diminish Emulsion Problems

By R. Van A. Mills.
Petroleum Engineering Editor

To lower its lifting costs and to diminish emulsion troubles on its repressured properties the Tidal Oil Company has conducted extensive field experiments upon the flowing of small oil wells by compressed air. This work conducted by George M. Small of the Tidal company's engineering department has been eminently successful.

It is the purpose of this paper to describe the method that Mr. Small has developed for flowing small oil wells by compressed air under automatic control. All of the information herein presented has been furnished the writer by Mr. Small.

Operating Principles of the Booster Collar

In flowing small oil wells by injecting compressed air or natural gas into them, it has been found advantageous to use trap reservoirs in which the oil to be lifted can accumulate and then be forced to the surface by the application of pressure. The trap serves the double purpose of keeping the air or gas from escaping into the productive sand and prevents the oil from being forced back into the formation. The arrangement of the equipment in the well is shown by the accompanying sketch. The trap is generally made of 4-inch casing 40 feet long with a standing valve at the bottom and a swage connection to a string of 2-inch tubing at the top. The 2-inch tubing serves as a pressure string through which the compressed air or gas used in flowing the well is forced into the oil trap at the bottom of the hole. Inside of the 2-inch tubing there is run a string of three-fourths-inch which serves as a flow string. This flow string extends to within a few inches of the bottom of the trap and is equipped with a one-thirty-second-inch booster hole at a distance of 125 feet above the foot of the flow string. At the top of the well above the casing head there is a tight packing box connection between the 2-inch pressure string and the three-fourths-inch flow string. Thus when pressure is applied in the 2-inch pressure string and the standing valve is closed, the trap and pressure string constitute a closed system, except for the openings through the flow string.

The differential pressure at a booster hole or booster collar placed in the flow string within this closed system is equal to the gauge pressure equivalent of the static head of an unaerated column of the liquid being flowed and extending from the bottom of the flow string to the booster hole or booster collar. The distance from the foot of the flow string to the booster hole is marked "X" in the accompanying sketch. This means that this differential pressure is constant, regardless of the pressure applied in the pressure string (B, Figure 1).

To prove this let:

P_1=the gauge pressure in the outer tubing.

P_2=the differential gauge pressure at the booster hole.

X=the distance in feet from the bottom of the flow string to the booster hole.

Y=the operating submergence which is equivalent to a head of Y feet of the unaerated liquid standing in the flow string above the booster hole.

The point at which this column of unaerated liquid would stand in the flow string to yield the operating submergence is found by reducing the outer tubing gauge pressure to its equivalent head in feet of the unaerated liquid being flowed. Then, since the fluid above the booster hole exerts a downward gauge pressure equal to that which would be exerted by a vertical column above the booster hole of Y feet of the unaerated liquid being flowed; and since 2.30 feet of water or 2.66 feet of 32 degrees A.P.I. oil will

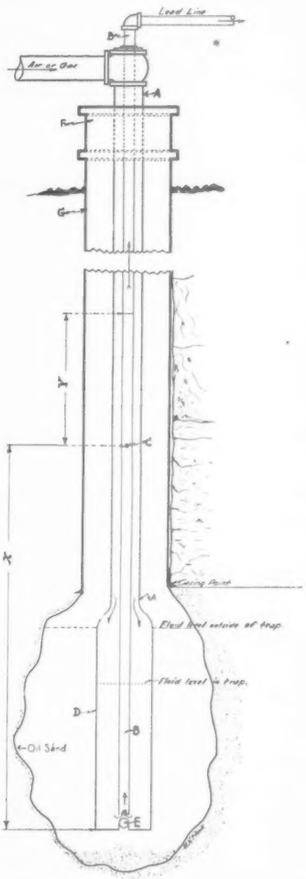


Figure 1—Diagrammatic sketch of trap equipment for flowing small oil wells. The parts of the equipment are designated as follows: A, pressure string; B, flow string; C, booster hole; D, reservoir trap; E, standing valve; F, casinghead; G, casing.

yield a pressure of one pound per square inch, we have for the oil:

$$P_2 = P_1 - \frac{Y}{2.66}$$

But the distance X plus Y in feet divided by 2.66 gives the pressure in pounds per square inch at the bottom of the flow string which is equal to the pressure in the pressure string. That is:

$$P_1 = \frac{X}{2.66} + \frac{Y}{2.66}$$

Substituting this value for P_1 in the first equation we have:

$$P_2 = \frac{X}{2.66} + \frac{Y}{2.66} - \frac{Y}{2.66}$$

or

$$P_2 = \frac{X}{2.66}$$

But X is the distance in feet that the booster hole or collar is located above the bottom of the flow string. This is a constant. The number 2.66 is also a constant. Therefore P_2, the differential pressure at the booster hole or collar is constant regardless of the pressure applied in the pressure string. As just proven, this constant differential pressure is equal to

$$\frac{X}{2.66} = \frac{\text{The distance from the foot of the flow string to the booster hole or booster collar.}}{\text{The number of head feet of the unaerated fluid being flowed, that are required to yield a pressure of one pound.}}$$

The distance Y above the booster hole, which is equal to the operating submergence in feet, is known because X + Y is the liquid head in feet which is supported by the pressure P_1 in the pressure string. Since P_1 and X are known, Y is also known.

The per cent submergence is equal to Y in feet divided by the distance in feet from the booster hole to the top of the flow string. Knowing the per cent submergence, we can estimate the maximum efficiency that may be expected. This is roughly equal to the percentage submergence.

If we wish to flow the well at the rate of 10 gallons per minute we can calculate the number of foot pounds of work necessary. Then, knowing the differential pressure at the booster collar, we make the hole large enough to pass the required amount of air or gas at known pressure to perform the required amount of work at the estimated maximum efficiency. Experience has proven that one booster hole from three-sixty-fourths to one-thirty-second of an inch in diameter in a three-fourths-inch flow string is satisfactory.

It is also to be noted that the distance of the booster hole above the foot of the flow string should be about fifteen per cent of the total length of the flow string, and that the operating submergence above the booster hole should be at least 25 per cent of the total length of the flow string. Therefore, the pressure applied in the pressure string should be sufficient to raise an unaerated column of the liquid that is to be flowed to a height of approximately 40 per cent of the total length of the flow string. Thus, to flow 32 degrees A.P.I. gravity oil from a well 2,000 feet deep, the gauge pressure required to support a column of oil standing to a height of 40 per cent of this depth or 800 feet must be equal to

$$\frac{800}{2.66} = 300 \text{ pounds per square inch.}$$

To flow the well, the column of liquid Y must be extended to the surface without increasing its weight. This is done by aerating the liquid column above the booster hole. We have two forces acting at the booster collar, namely, an upward pressure equal to

$$P_1 - \frac{Y}{2.66}$$

and the expansion of air at the booster hole. However,

$$\frac{Y}{2.66}$$

exactly balances the upward pressure.

The flow column above the booster hole must therefore be lightened by air or gas displacing the liquid until the upward force which is equal to the operating submergence (either natural or artificial) is sufficient to overcome the weight of column Y. When the well is flowing, the flow column can never exert a downward pressure greater than the submergence pressure at the bottom of the flow string.

Since an unaerated column of the liquid equal to the height Y above the booster hole would be supported by the submergence pressure at the booster hole, the lift is calculated from the top of the column Y. Actual experience has proven that the height of the column Y (submergence) above the booster hole must be at least 20 to 25 per cent of the length of the flow string from the top of the well to the booster hole. Any attempt to lift a shorter column by adding more air to extend the column by greater aeration results in excessive slippage and poor efficiency.

Any attempt to jet fluid from a well must fail because the submergence pressure equals the lifting pressure and the introduction of air into the column has no lifting force in itself. An efficient jet may exert a pull of seven pounds vacuum. This is an artificial submergence of 18.62 feet which is no benefit in a hole deeper than 80 feet.

Automatic Control

The foregoing method of flowing small wells requires manual or mechanical control, preferably automatic control. This need for a mechanical control operating automatically has been met by Mr. Small who has developed the automatic control device shown in the accompanying photograph, Figure 2.

In addition to the equipment shown in the photograph a string of one-fourth-inch pipe is run down the well in the annular space between the 2-inch tubing and

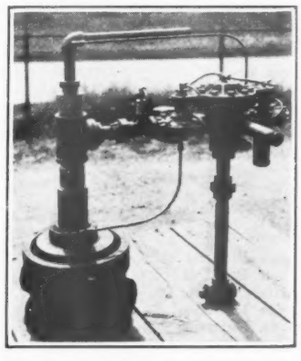


Figure 2—Automatic control device for flowing small oil wells with compressed air or natural gas.

the casing to a point even with the top of the reservoir trap. This one-fourth-inch tubing, called the pilot tube, is swung through a special opening in the top of the casing head above which it is connected with and operates the starting control as explained later.

The controls of the flow device are operated by three diaphragms shown at the right of the casing head in the accompanying photograph. The large central diaphragm operates the main flow pressure control. The starter diaphragm is at the left and the shut-off control diaphragm is at the right.

The starting control is operated through the one-fourth-inch pilot tube extending through the casing head and down the well to a point even with the top of the reservoir trap. When the fluid level in the well rises on the outside and inside of the trap so that the lower end, or foot, of the pilot tube outside of the trap becomes emersed in oil, the pressure in the well forces oil up the pilot tube. A small leak in the pilot tube above the casing

(Continued on Page 125)

Magnetometer Survey of Oklahoma

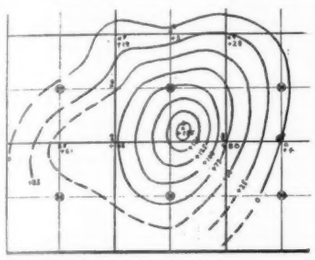
Various Sections Are Described and Geological Data Given With Results of Magnetometer Surveys in Same Territories

By L. Spraragen

Accompanying is the second part of the article on the use of the magnetometer in Oklahoma, the first part having been published in the Oil and Gas Journal of November 1. Texas and other states will be covered in articles of the series prepared by Mr. Spraragen and now being published in The Oil and Gas Journal.

Ozark Mountain Area

In the northeastern part of the State, comparable with the Ozark Mountain area, Plate 1 shows a magnetometer high at Miami and a magnetometer anticline extending from Miami, Ottawa County, to west of Stigler, Haskell County. The axis of this magnetometer anticline passes through Miami; Vinita, southern



Magnetometer survey, R 13e, T 21n, Oklahoma—contour interval 25 gamma. Earl A. Trager.

Craig County; Pryor, Mayes County; Wagoner, Wagoner County; and then south to a point slightly west of Stigler, Haskell County.

Plate 2 shows approximately the same results except that the regional corrections have changed the contours from a terrace to several closed magnetic highs and lows. In the northeastern part of the State this plate shows magnetic highs at Miami, Pryor and Muskogee. Adjacent magnetic lows are found at Oswego (Kansas), Claremore and Tahlequah.

Ouachita Mountain Area

In the southeastern portion of Oklahoma, included in the Ouachita Mountain region, the magnetometer survey Plate 1 shows that the lines of equal vertical intensity run almost due east and west, while Plate 2 shows a general decrease in the intensity towards the southeast. Apparently there are no decided magnetic anomalies in this region that can be attributed to the influence of the Ouachita Mountain range.

Arbuckle Mountain Area

In the vicinity of the Arbuckle Mountains the magnetic survey presents a very decided and outstanding picture. Here the outcrops of granite show their effect on the magnetometer by a magnetic high of about 700 gamma rising abruptly in the vicinity of Tishomingo. The major axis of this magnetic high runs northwest and southeast.

The reader's attention is called to the differences in results here and those obtained at Eldorado, Kans. In the latter plate it was found[3] that the magnetometer showed an extreme low, yet Eldorado is located on the granite ridge. It is apparent discrepancies of this sort that lead to the difficulties of interpretation. Of course it is not unreasonable to suppose that some of this departure from the results expected may be due to the fact that Eldorado is near the end of a long ridge of granite extending from Seneca to Winfield and at one end of this ridge (Seneca) the magnetic intensity is high while at the other end (near Eldorado) the magnetic intensity is low, behaving in many respects like the hypothetical case of a bar magnet placed in a magnetic field as discussed by the author in a previous article.[4]

At Tishomingo the granite is more or less concentrated in the form of a dome; that is, it is not spread out along any one particular direction, acting in many respects like the hypothetical case of a veritcal magnet with the "S" pole up as discussed in the same article referred to above.

It is also noticeable that Plate 1 indi-

(Continued on Page 159)

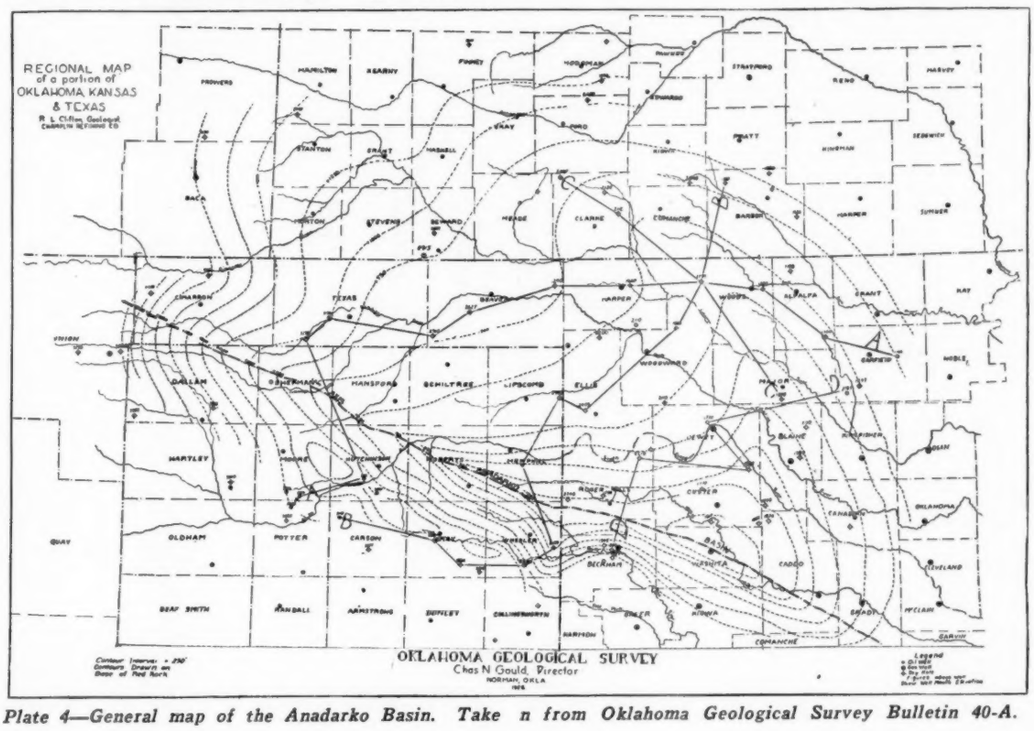


Plate 4—General map of the Anadarko Basin. Take n from Oklahoma Geological Survey Bulletin 40-A.

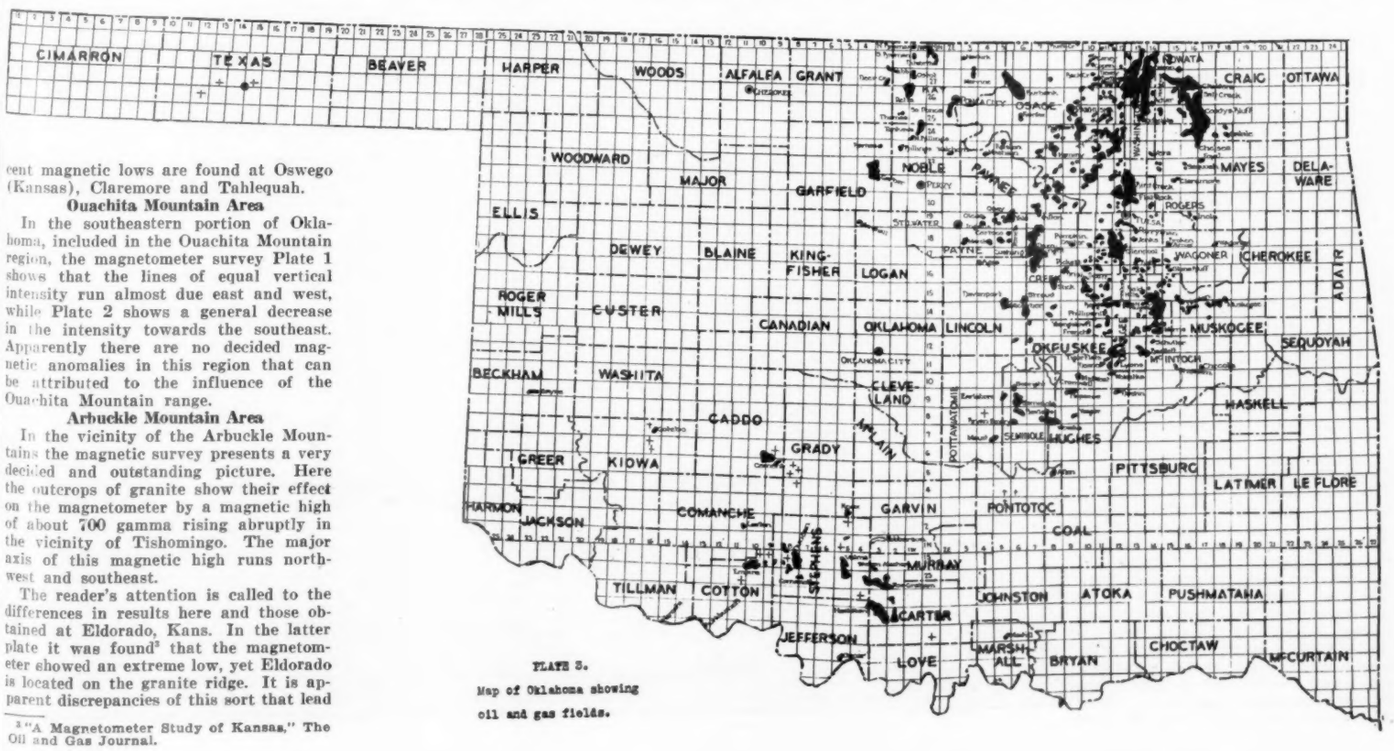


PLATE 3.
Map of Oklahoma showing oil and gas fields.

[3] "A Magnetometer Study of Kansas," The Oil and Gas Journal.

[4] "The Use of the Magnetometer in Prospecting for Oil-Bearing Structures," The Oil and Gas Journal.

California Prepares for Flood of Oil

Production of 800,000 Bbls. Will Be Attained Probably in February. Much Promising Territory Undeveloped

By J. E. Eaton
Consulting Geologist

The most important event of many months in California oil circles has been almost overlooked in the rush of deep-zone development. This event was the bringing in of a 2,500-bbl. well at 3,920 feet by the Pacific Eastern Production Co. (Gulf) at Fruitvale. The well is apparently near the crest of the very large anticline, and is the largest ever brought in on the eastern side of San Joaquin Basin.

The significance of this well is the proving of the Bear Mountain sheer zone for big production. It indicates that the Gulf interests have added at least 50,000,000 bbls. of oil to their total ultimate production. They control practically the entire field. The Bear Mountain sheer zone was discovered and named by Hoyt S. Gale, chief geologist of the Pacific Eastern Production Co.

Another interesting event was the Kettlemen Hills discovery of the Milham Exploration Co. (Mexican Seaboard), which is making some 60,000,000 feet of gas and several hundred barrels of oil at 7,108 feet. This well is 16 miles northwest from the shallow discovery of the Bolsa Chica corporation, and is on a separate dome. There are apparently three or more separate large domes. About half of the whole is controlled by the Standard Oil Co. of California. The oil possibilities of the Kettleman Hills district were first worked out and made public by Ralph Arnold and Robert Anderson in Bulletin 398, United States Geological Survey.

These events merely climax a series of half a dozen discoveries during the past year which have added several hundred million barrels to the potential oil reserves of California. Most of these reserves are held in large blocks and need cause little concern as regards immediate development.

California has too much oil. It could easily run its production to over 1,000,000 bbls. daily and keep it around this figure for several years. It will not do this, for conservation will be practiced. Some of the largest oil fields are yet to be discovered in this State.

Santa Fe Springs

A committee of engineers appointed from the larger oil companies recently submitted a working estimate on the future production of oil and gas at Santa Fe Springs. There is insufficient data at hand for an accurate estimate. This estimate was predicated on the assumption that the Buckbee oil zone now being developed would have approximately the same characteristics as the old Meyer zone.

It was estimated that production at Santa Fe Springs would average 319,000 bbls. of oil and 387,000,000 feet of gas per day during the month of January, this month to be the peak. It was further estimated that for June the production of the field would drop to an average of 128,000 bbls. of oil and 152,000,000 feet of gas per day. In December, a little more than a year from now, the average production to be 76,000 bbls. of oil and 52,000,000 feet of gas.

The writer believes that the above estimate is probably a maximum as regards peak production of oil. The estimated peak is possibly somewhat too high, and the decline thereafter too rapid. It is believed that the peak will more likely be reached in February than in January. This estimate by a board of engineers nevertheless represents a constructive attempt to form a working hypothesis. It was qualified in its original form, and is a step toward organizing the local oil industry for a proper conservation of natural resources.

The actual potentialities of the deep zone or zones at Santa Fe Springs are at present purely a matter of speculation, for only three wells are on production, and none of these has seemingly penetrated more than about 100 feet into the sand. The only other data at hand are comparisons with other fields, such as Long Beach. It is known that some 3,000 feet of deep rocks which are productive at Long Beach are untested at Santa Fe Springs. Moreover, the first wells at Santa Fe Springs have had large yields. These features combined warrant a rather high estimate, on the general order of the one made public by the committee.

General Production

Recent production is shown on an accompanying graph. Note that the general decline in State production will soon be arrested, and that a major upturn will then start. The California decline curve is expected to flatten in November, and to start strongly upward in December. It is indicated that a daily yield for the State in the neighborhood of 800,000 bbls. will be attained by next February if there is no further curtailment. It is too early for precise figures.

California stocks of refinable crude were drawn upon to the extent of 1,475,071 bbls. in September. They have been reduced by 5,295,090 bbls. in the past year. This is a healthy sign, and one which has prepared the local oil industry for the coming increase in production.

Heavy crude is still a drug upon the market, and the surplus is increasing. It was added to stocks heavily in September. The Standard Oil Co. of California recently cut the price of Kern Front heavy crude from a figure of 75 cents to one of 50 cents a barrel, this as a protest against an opening up of shut-in production which provided more of this surplus product than could be stored at a profit. The heavy crude situation is serious. It is to be considered separately from the situation as regards light oil, however, for we have as yet no great surplus of the latter aboveground in California, as is evidenced by the strong demand for light crudes.

Danger Points

At present, the most dangerous factor in California is the large number of deep, untested horizons in some major fields. An accompanying chart compares the tested with the untested oil horizons of certain Los Angeles Basin fields. The deep oil horizons have been carefully conserved by large oil companies who have realized that they are a valuable stabilizer and insurance against famine if kept in reserve. It seems unlikely that they will be developed immediately. If they should be, the result would be disastrous.

In San Joaquin Basin, the deep oil zone in the great Midway Field is being partly opened up, but as yet there are hardly half a dozen wells on production, and the development may be slow. San Joaquin Basin is perhaps the greatest potential future oil area of its size in the United States. Large parts of this basin are only beginning to be developed.

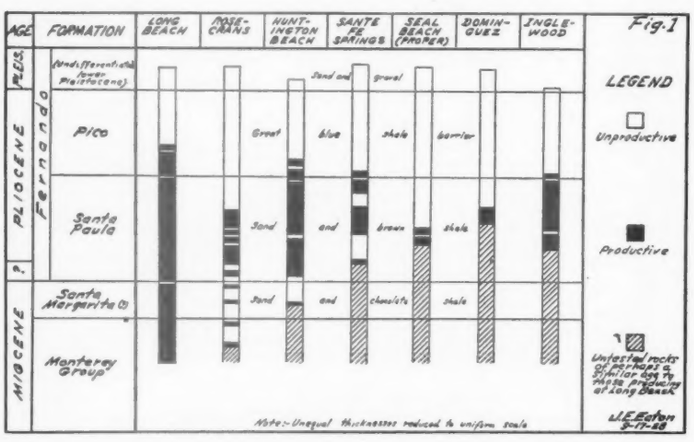
It sounds incredible, but California could if necessary almost double its present production for a time, and this without relying on future fields. That this has not been done is solely a matter of good business and conservation. New oil fields are just around the corner, for we know of many good-looking anticlines which are as yet untested. For the oil industry to relax at this time its efforts to hold down production would be fatal.

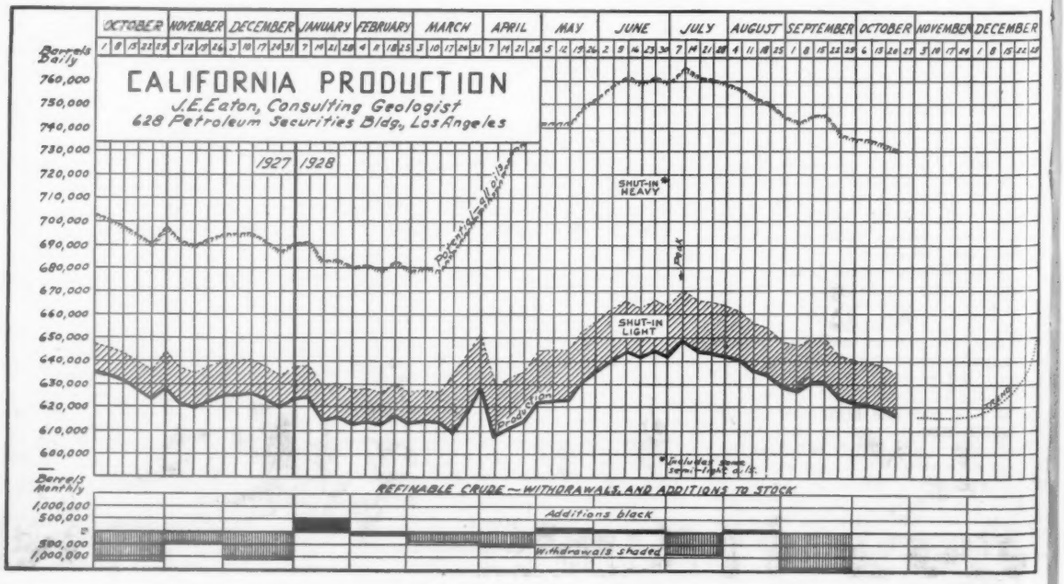
Summary

California is about to start a major unward swing as regards production of light oil. Providing there is no further curtailment, the State yield may be increased by about 200,000 bbls. in the next few months, or to a total daily yield in the neighborhood of 800,000 bbls. Steps are being taken to prepare for this event in the best known ways. There is an apparent willingness to co-operate under the guidance of official and semi-official direction.

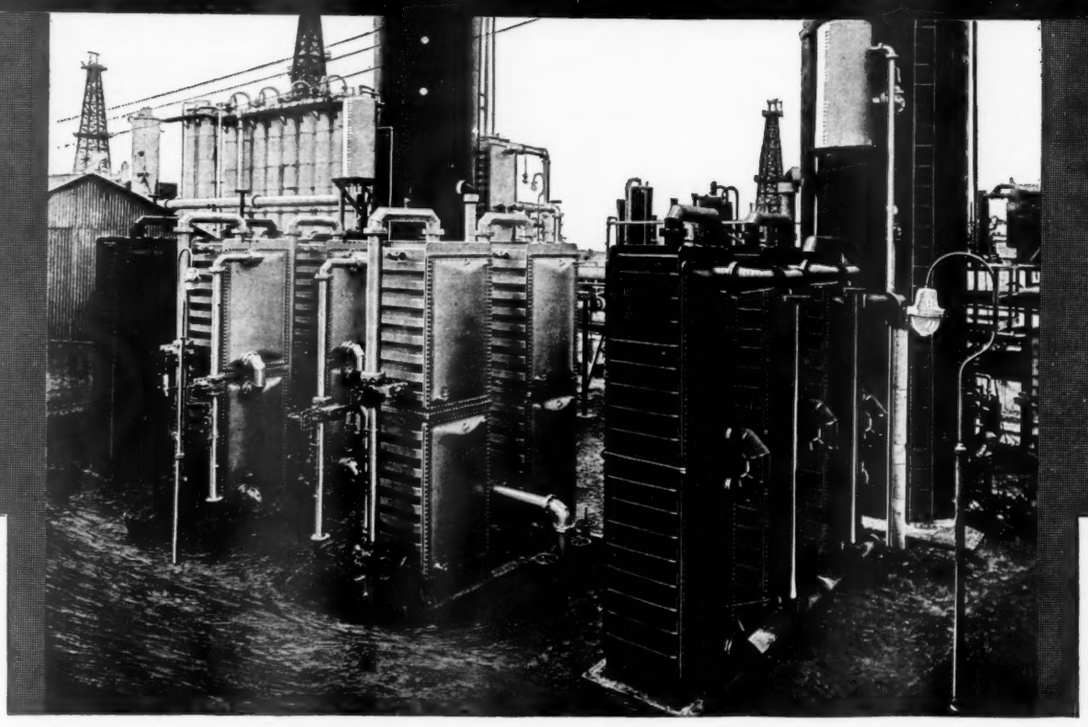
It is believed that California will be able to handle this coming output of light oil without serious harm. If possible, this should be done without further impairing the position of the average producer, for he has already suffered severely.

There are always those who profit by the misfortune of others. Other than this, it may be remembered that the oil industry is not fighting individuals, but is combating a potential prevalence of too much oil. In this combat it has only one good weapon—legitimate co-operation to the fullest extent.





SOUTHWESTERN HEAT EXCHANGERS



LOWER COSTS

Condensers
Heat Exchangers
Rectifying Units
Tube Stills
Fractionators
Absorption Towers
Absorption Plants
Water Tube Boilers

SOUTHWESTERN Heat Exchangers have an established record for efficient performance, made possible by high velocities with consequent high transfer rates.

Southwestern Heat Exchangers are built to meet any condition in the oil refinery or absorption plant where heat exchange involving liquids or vapors is concerned.

Submit your problem to Southwestern.

SOUTHWESTERN ENGINEERING CORP.

606 SOUTH HILL ST.
Los Angeles, Calif.

Branch
605 Mayo Building
Tulsa, Oklahoma

117 Liberty Street — Room 1606 — New York City

Branch
426 Transportation Bldg.
Montreal, Canada

1217 Magnolia Building, Dallas, Texas

5981

Southwestern Engineering Corp.
Mail to Nearest Office

Please send information regarding Heat Exchanger Equipment.

*Name*_____

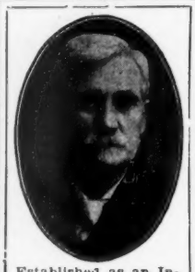
*Address*_____

*Attn. of*_____

The OIL and GAS JOURNAL

PRODUCING REFINING ENGINEERING MARKETING

Published Weekly by
THE PETROLEUM PUBLISHING COMPANY
114-116 West Second Street
TULSA, OKLA.

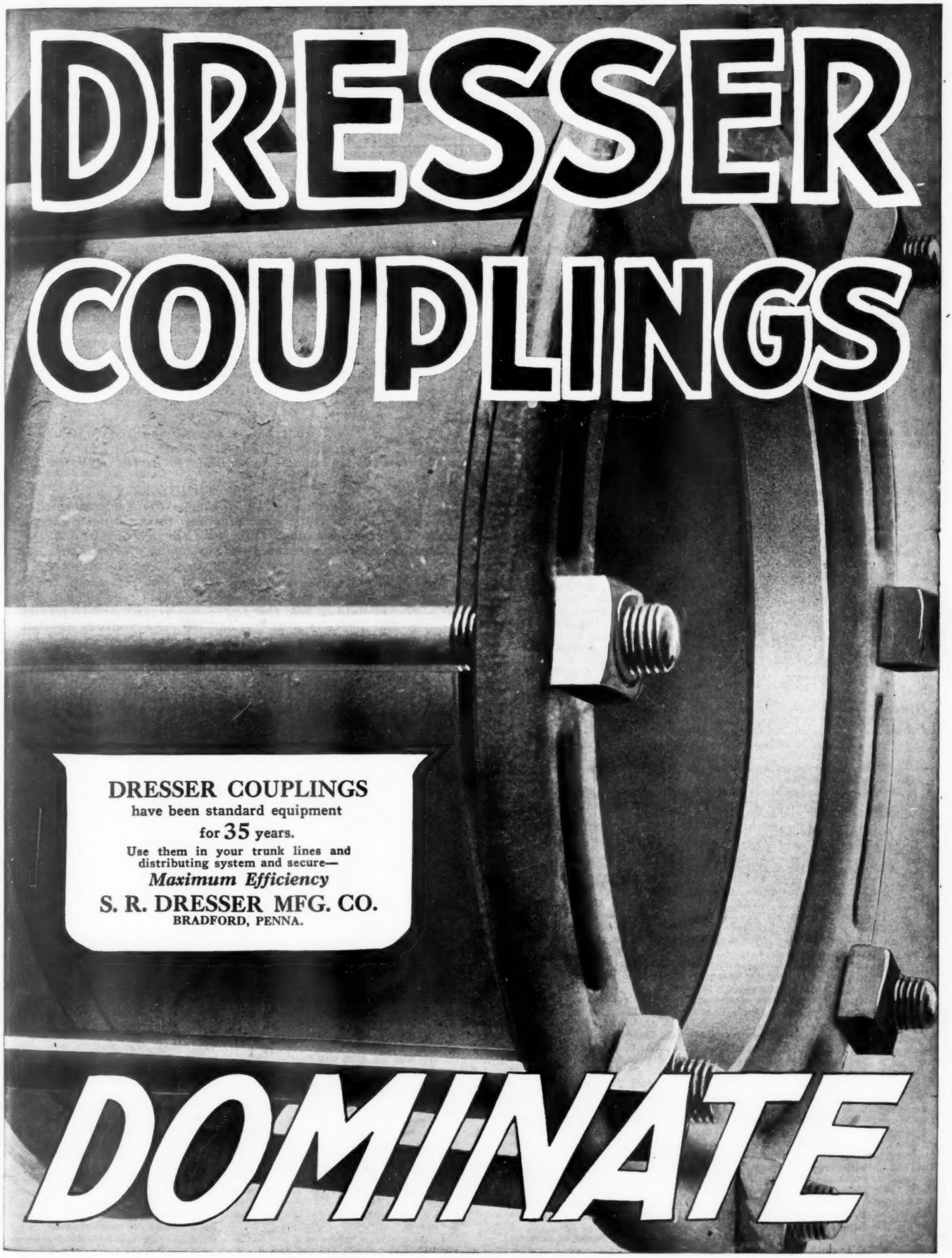


Established as an International Publication in 1910 by Patrick C. Boyle

President - - - - - - - - - - - - - - Frank T. Lauinger
Vice President and General Manager - - Robert W. Egan
Secretary-Treasurer - - - - - - - - - - - W. T. Bryan
Editor - - - - - - - - - - - - - - - James McIntyre
News Editor - - - - - - - - - - - Andrew M. Rowley
Associate Editor - - - - - - - - - - - W. T. Anderson
Refinery Editor - - - - - - - - - - - - C. O. Willson
Technical Editor - - - - - - - - Charles K. Francis, Ph.D.
Petroleum Engineering Editor - - - R. Van A. Mills, E.M.
Advertising Manager - - - - - - - - - - Clarence Morris
Circulation Manager - - - - - - - - - - J. P Mulkern

DISTRICT ADVERTISING OFFICES

C. L. CAIN - - - - - 101 Park Ave., NEW YORK CITY
E. KLAPPENBACH, 1328 Peoples Gas Bldg., CHICAGO, ILL.
ALVIN E. LOEFFLER State Theater Bldg., PITTSBURGH, PA
C. R. JOHNSON - - - - - - - - - - - - - - -


DRESSER
COUPLINGS
DRESSER COUPLINGS
have been standard equipment
for 35 years.
Use them in your trunk lines and
distributing system and secure—
Maximum Efficiency
S. R. DRESSER MFG. CO.
BRADFORD, PENNA.
DOMINATE

PROGRAM OF ANNUAL MEETING A.P.I.

NINTH ANNUAL MEETING AMERICAN PETROLEUM INSTITUTE
December 3, 4, 5 and 6, 1928
Stevens Hotel, Chicago, Ill.

The American Petroleum Institute makes the following preliminary announcement of the program, as tentatively arranged, for its Ninth Annual Meeting, to be held at the Stevens Hotel, Chicago, Ill., December 3, 4, 5 and 6, 1928. A revised program will be published before the annual meeting indicating changes and additions.

MONDAY, DECEMBER 3, 1928

2:30 p. m.—Meeting Board of Directors.....Private Dining Room No. 1

TUESDAY, DECEMBER 4, 1928

Morning

10:30 a. m.—Meeting of the Board of Councillors.....North Ball Room
To nominate candidates for election as members of the Board of Directors.

Directors' Meeting

12:30 to 2:00 p. m.—Meeting of the Board of Directors. (Luncheon in Private Dining Room No. 1).

Afternoon

2:30 p. m.—General Session.....Grand Ball Room
The President's Address.
Report of Board of Councillors.
"Value of Standardized Oil Field Equipment,".....W. G Skelly, Skelly Oil Co.
"The Banker's Interest in the Petroleum Industry.".....Craig B. Hazelwood, Union Trust Co., Chicago, President, American Bankers Association.

WEDNESDAY, DECEMBER 5, 1928

NOTE: There will be no general session on Wednesday. The day will be devoted to Group Meetings arranged by general topics, at which the various subjects will be treated in addresses by selected speakers. Opportunity will be given for brief general discussion of the subject.

Directors' Meeting

12:30 to 2:00 p. m.—Meeting of the Board of Directors. (Luncheon in Private Dining Room No. 1).

Morning

10:00 a. m.—Group Meetings:

Group 1—General Topic: "Production.".....Grand Ball Room
Chairman: W. S. Farish, Humble Oil & Refining Company.
"Production and Proration in the Texas-Arkansas-Louisiana Area.".....J. Elmer Thomas, Fort Worth, Texas
"Gas Conservation and Production in California.....M. E. Lombardi, Standard Oil Co. of California
"The Mid-Continent Production Situation.".....Ray M. Collins, Echo Oil Co.
"Production Developments in Rocky Mountain District.".....S. H. Keoughan, Continental Oil Co.

Group 2—General Topic: "Refinery Technology.".....North Ball Room
Chairman: P. M. Miskell, Empire Refineries, Inc.
"Utilization of Heavy Oil Acid Sludge.".....H. G. Osborn and L. L. Davis, Marland Refining Co.
"Process Conversion of Cylinder Stock Sludge to Plant Fuel Oils.".....L. W. Barbour, Pierce Petroleum Corp.
"Control of Refinery Odors.".....David E. Day, Richfield Oil Co.
"Refinery Evaporation Conservation.".....E. C. Herthel and William Mendius, Sinclair Refining Co.
"Burning of Clay in Multiple Hearth Furnace.".....MacLean Houston, United Refining Co.
"Use of Some Catalytic Agents in Revivifying Used Filter Clay.".....F. R. Lang, Roxana Petroleum Corp.

Group 3—General Topic: "Automotive Transportation.".....South Ball Room
Chairman: D. E. Buchanan, Chestnut & Smith Corp.
Work of Automotive Committee in 1928.
"The Maintenance of Automotive Equipment.".....H. W. Kizer, The Texas Company
"Motor Vehicle Cost Accounting and Its Relationship to Economical Fleet Operation.".....G. W. Gwynne, Continental Oil Co.
"Transport Hauling on the Pacific Coast.".....F. H. Asbury, Asbury Transportation Co.

Afternoon

2:00 p. m.—Group Meetings:

Group 1—General Topic: "Development and Production Engineering.".....South Ball Room
Chairman: Thomas A. O'Donnell.
"Unit Operation of Oil Fields.".....J. O. Lewis, Dunn & Lewis
"Function and Application of Gauges to Oil Country Material.".....B. S. Terry, Pratt & Whitney
"Pumping Experiments.".....F. W. Lake, Union Oil Co. of California
"Care and Use of Sucker Rods.".....Speaker to be announced

Group 2—General Topic: "Refinery Technology: Pipe Still Distillation of Lubricating Oils.".....North Ball Room
Chairman: John L. Gray, Shaffer Oil & Refining Co.
A discussion of the relative advantages of vacuum as compared with the use of steam at atmospheric pressure.
"Reducing 2,500 Barrels of Pennsylvania Crude Per Day to Cylinder Stock Bottoms on Single Pass Pipe Still.".....A. C. Vobach, Sinclair Refining Co.
"Applications of the Pipe Still to Vacuum Distillation.".....A. E. Harnsberger, Pure Oil Co.
"A Summary of the Relative Advantages of Pipe Still Distillation under Vacuum and with Steam at Atmospheric Pressure.".....W. A. Peters, F. B. Badger and Sons Co.
"Equilibrium Vaporization of Oils and Carrying Effect of Light Ends."
..R. F. Piroomov and G. A. Beiswenger, Standard Oil Co. of New Jersey

Group 3—General Topic: "A Code of Practices for Marketing Refined Petroleum Products.".....Grand Ball Room
Chairman: Roy B. Jones, Panhandle Refining Co.
The Regional Committees appointed to consider and make recommendations with respect to a national petroleum industry Code of Ethics have made recommendations to the General Committee, which is composed of the several regional committees.
The General Committee will recommend the complete draft of "A Code of Practices for Marketing Refined Petroleum Products" to the Board of Directors on Monday afternoon, December 3.
The complete text of the Code, as approved by the Board of Directors, will

(Continued on Page 139)

HIGH SPOTS IN FIELD NEWS

OKLAHOMA

Greater Seminole reported 298,634 bbls. Tuesday morning from 1,261 wells.

St. Louis production was 130,380 bbls.

Empire well between Little River and St. Louis was a failure in the Wilcox.

Umpire Collins called a meeting of the Seminole Advisory Committee for Wednesday, November 7.

New Wilcox Pool opened west of St. Louis.

KANSAS

Danciger, Valerius and Cheney well in Rush County has increased gas production from 3,575 feet and is spraying some oil. It is first deep gas producer in that part of the state.

CALIFORNIA

California production expected to reach 800,000 bbls. by February. Definite program for proration to be presented to the operators of Santa Fe Springs Friday.

McKeon Drilling Co.'s York and Lockhart well made 3,000 bbls. 35 gravity from 5,707 feet, the fourth producer to be finished in the deep zone which is yielding 14,000 bbls. daily. George Getty's No. 17 Nordstrum is the largest single producer, 5,500 bbls.

GULF COAST

South Texas Co.'s No. 2 Morris, south edge, Humble Field, flowing 500 bbls. from 4,350 feet.

New shallow sand at South Liberty, "cavity" well, is flowing 1,550 bbls.

MUSKEGON, MICHIGAN

Daily production in the Muskegon Field was more than doubled by the completion of a well in the Dundee formation making 3,000 bbls. It has an estimated flow of 2,000,000 feet of gas and is lifting oil at the rate of 100 bbls. an hour.

WEST TEXAS

Shipley and associates' No. 1 Hazlett, southeastern Ward County, had sand pay at 2,480-81 feet and has 500 feet of fluid in hole that tested 32.5 gravity and 34 gravity at 75. There is some gas and the oil has strong sulphur odor.

ROCKY MOUNTAIN AREA

Sundance sand well in Salt Creek flowed 5,000 bbls. in 30 hours. Marland Co. has 15,000,000-foot flow in No. 1 Lynn, Lea County, New Mexico.

Late News from the Field

OKLAHOMA

The Greater Seminole area production by pools on Tuesday morning of this week follows:

	Bbls.
Little River	115,488
Maud	1,334
Mission	125
Bowlegs	50,347
Earlsboro	77,532
Seminole	42,719
Searight	11,089
Total (from 1,261 wells)	298,634

The completion of three additional wells in the Greater Seminole area failed to make any appreciable increase in the production.

The St. Louis Pool produced 130,380 bbls. from 220 wells on Tuesday morning at 7 a.m. There were no important wells in this area excepting The Texas Company and Fuhrman Petroleum Co.'s No. 1 Cherry, SW cor. NW NW Section 25-7-4, which is flowing 100 bbls. per hour from the Wilcox sand. This well still has a bailer in the hole and is waiting for additional pipe line facilities before drilling any deeper.

An important well situated between Little River and St. Louis is a failure in the Wilcox sand. This is the Empire Oil & Refining Co.'s No. 1 Harjo, which was reported in the Oklahoma field news of this same publication. The Empire well found the Wilcox sand 4,596-4,600 feet with a hole full of water and is shut down for orders.

In the northeast extension of the Earlsboro Pool the Skelly Oil Co. and T. B. Slick, Inc., No. 1 Campbell, SE cor. NW Section 6-9-6, is a better well than was expected. It had the Wilcox sand 4,332-4,352 feet and was shot with 10 quarts. It was shot a second time with 30 quarts after being drilled to a total depth of 4,370 feet, and produced 1,280 bbls. the first 17 hours.

KANSAS

The wildcat well of Danciger-Valerius & Cheney in Rush County, which was reported in the Kansas news of this week as having 3,000,000 feet of gas from a total depth of 3,575 feet, has increased the amount of gas without any deeper drilling, and it is also spraying oil. It is believed that the oil is coming from the Oswalt lime, where a showing of oil was found. The well is now reported making 5,000,000 feet of gas, and it is waiting for casing to be run before any deeper drilling. This is the first deep gas which has been found in this part of the State and for that reason the well is especially interesting. The well is in Section 27-17-17w.

CALIFORNIA

LOS ANGELES, Calif., Nov. 6.—McKeon Drilling Co. presented York and Lockhart with a 3,000-bbl. well a few days ago when their No. 1 was turned loose from 5,707 feet. The oil is exceptionally clean and tests 35 degrees grav-

(Continued on Page 125)

North Texas and Panhandle Decline

Water Shortage Responsible. Only Few Wells Active for Two Weeks. Archer Pool Opener Pumps 50 Bbls.

By James H. Dameron
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex. Nov. 5.—Outstanding developments in North Texas were few and far between as the territory showed a decline in production with every district from the Panhandle to Ranger showing a decrease. The quiet period will probably be short lived with the resumption of drilling at a normal rate in the Wichita Falls district.

That area, particularly Southeastern Wilbarger County, has suffered from a water shortage and only a handful of wells were active during the past two weeks. A drenching rain in that country last week has filled streams and ponds and drilling has been resumed on most of the wells shut down because of a shortage of drilling water.

Only three producers were finished in Wilbarger County with Waggoner Refining Co.'s 400-bbl. producer on the Waggoner-I lease leading the group. Baker and associates completed a 175-bbl. well in the Consolidated Pool and the remaining oil well was Phillips Petroleum Co.'s 125-bbl. well in Rock Crossing. Five dry holes were abandoned.

Six in Wichita County

Wichita County finished the week with a clean record with half a dozen new wells, two of which were good for better than 100 bbls. The other four were smaller wells. Ryan Petroleum Corp.'s No. 99 Nance was the banner completion and made 375 bbls. on the swab.

Archer County's new pool opener, which made its initial showing about two weeks ago, was put on the pump and made 50 bbls. The well was drilled by Jim Turner on the Lyles lease in the Hooper & Wade Subdivision No. 7 in the northeastern part of the county and had sand at 1,690-92 feet. Turner has made location for the west offset, 300 feet west of No. 1.

An 80-bbl., 1,200-foot well was the best completion of Archer County's group with a 50-bbl. well ranking second. Two other wells were good for 8 and 2 bbls. respectively, both in shallow pays and five dry holes wound up the completion report.

Superior Oil Co.'s No. 1 Reynolds' J. Fenner Survey, Southeastern Haskell County, drilled by Moody Corp., which was purchased by the Superior company, was not drilled into water as formerly reported. The well is being put on the pump and is estimated good for 100 bbls. daily.

Total depth of the hole is 1,727 feet. When the bit went into the pay at 1,726 feet some water showed. A color test was made and showed the water to be coming from behind the pipe. Casing was set with a packer but had to be pulled and re-set before a shut off was made. Superior has moved the rig to the west offset which may test the thickness of the sand.

Moore County Wells

Panhandle went through a quiet week with considerable attention shifting to Moore County where three wells are down to depths where they should tell their story in a few days in that territory which went on an upward swing several weeks ago. Dixon Creek Oil Co. has one well nearing the pay. All three wells are standardizing after cementing 8-inch pipe.

Moore County snapped into prominence when Skelly Oil Co.'s No. 3 Armstrong and Byrd made a remarkable producer. The well kept Moore County's production over 2,000 bbls. daily for a few weeks but fell off during the past seven days. Lease trading in that territory is slow but steady.

Gray County is getting the bulk of new work with other counties taking the short end in new locations and then mostly for routine inside wells. No outstanding completion was reported from the Lefors area and the best of the several completions in Gray County was Landreth Production Co.'s first well in Panhandle which made 130 bbls. after a shot.

Phillips Petroleum Co. was completing two wells early in the week. That company's No. 3 Johns, SE cor. SW Section 87, Block 3, I.&G.N. Survey, found granite wash pay at 3,110-19 feet and swabbed and flowed 325 bbls. the first 24 hours.

Same company's No. 2 Davidson (Myson), NE cor. W half NW Section 87, Block B-2, made 360 bbls. on a swab test from granite wash pay at 3,060-71 feet. Total depth of the hole is 3,074 feet. Phillips company completed the best well in the Panhandle last week with its No. 4 Barnum in Hutchinson County which made 200 bbls. after a 110-quart shot at 2,891-2,931 feet.

Coleman County Producer

Probably the outstanding well development in North Texas was in Coleman County last week when Mid-Sun Oil Co. and Richardson's No. 1 McClellan, McDonald Survey No. 672 showed for a Fry sand producer at 2,555 feet. The well is about 1½ miles west of Coleman and will be tested, probably, during the current week.

Panhandle showed the largest decline of the three districts in North Texas with a 575-bbl. loss, most of which was from Moore County. Wichita Falls district was down 297 bbls. and Ranger district dropped 385 bbls., which pulled North Texas down to 211,077 bbls., a loss of 1,257 bbls. in comparison with the previous week's estimate.

NORTH TEXAS

Estimated Daily Average Production for the Week Ending November 3

Panhandle District—	
Carson County	6,320
Gray County	28,805
Hutchinson County	30,410
Moore County	1,560
Potter County	20
Wheeler County	790
Total this week	67,905
Total last week	68,480
Decrease	575
Wichita Falls District—	
Archer County	19,571
Baylor County	100
Clay County	478
Cooke County	2,222
Jack County	1,552
Montague County	7,928
Throckmorton County	811
Wilbarger County	31,441
Young County	8,430
Wichita County	26,378
Total this week	98,911
Total last week	99,208
Decrease	297
Ranger District—	
Brown County	10,819
Callahan County	3,553
Coleman County	4,096
Comanche County	1,330
Palo Pinto County	413
Ranger	5,886
Shackelford County	10,540
Stephens County	7,624
Total this week	44,261
Total last week	44,646
Decrease	385
Grand total this week	211,077
Grand total last week	212,334
Decrease	1,257

TEXAS PANHANDLE WILDCATS

Week Ended November 3

Company, Well, Farm, Name, Section and Block—	Remarks—
CARSON COUNTY	
Denson et als' No. 1 W. E. Cobb, 930 ft. from N line, 280 ft. from E line, W ½ NW, Sec. 184, Blk. 2, I.&G.N. Sur.	S.D. 725 ft.
Duncan & Reiger's No. 1 J. B. Hodges, 330 ft. from E line and 330 ft. from S line of W½ of NW¼ Sec. 112, Blk. 7, I.&G.N. Sur.	Location.
Magnolia Pet. Co.'s No. 6 fee No. 344, 660 ft. from N line and 660 ft. from E line of E ½, Sec. 91, Blk. 4, I.&G.N.R.R. Sur.	Drlg. 300 ft.
Morris et als' No. 1 Barnard, NW cor. SW SE, Sec. 44,	S.D. 400 ft.
Navajo Oil Co.'s No. 2 Poling, 660 ft. from W and 330 ft. from N lines, N 30 acres SW, Sec. 22, Blk. X-2, T.T.R.R. Sur.	S.D. 1,950 ft.
Reynolds et als' No. 1 E Cooper, 330 ft. from S line and 330 ft. from E line of NW, Sec. 5, Blk. 9, I.&G.N. R.R. Sur.	S.D. 260 ft.
Spartan Oil Co.'s No. 1 S. Bednorz, NW cor. E ¼ NW, Sec. 202, Blk. 3, I.&G.N. Sur.	Spud.
Skelly Oil Co.'s No. 10 Schafer, 1,320 ft. from W line and 330 ft. from S line of N½ Sec. 188, Blk. 3, I.&G.N.R.R. Sur.	Rig on ground.
Stubblefield et als' No. 1 Cooper, 340 ft. N and 330 ft. W of line SE, Sec. 5, Blk. 9	Drlg. 630 ft.
Travis et als' No. 1 D. A. Harrell, C NE NE, Sec. 162, Blk. 7, I.&N.G. Sur.	Fish. 2,410 ft.
Ware et als' No. 1 Ware, 990 ft. S and 400 ft. E of NW cor. Sec. 18, Blk. 3, A.B.&M.	Spud.
CASTRO COUNTY	
Colorado O. & R. Co.'s No. 1 M. Slemmons, SW cor. Sec. 73, Blk. M-17, B.S.&F. Sur.	Rig blown down.
Mystery Oil Co.'s No. 1 J. L. Crum, SE cor. NE, Sec. 333, Blk. M-6, S.K.&K. Sur.	S.D. 510 ft. for csg.
CHILDRESS COUNTY	
C. L. Sloane et als' No. 1 B. P. Smith, Sur. 49, F. P. Knott lands	S.D. 4,005 ft.
The Texas Co.'s No. 1 Smith, 100 ft. each way from NW cor. Sec. 174, Blk. H, W.&N.W. Sur.	C.O. 3,800 ft.
COCHRAN COUNTY	
Clark & Melat's No. 1 C. C. Slaughter, 1,650 ft. E and 660 ft. S of NW tract, League 118, Knox County School land	Rig blown down.
Marland Prod. Co.'s No. 1 C. C. Slaughter, 330 ft. from S and W lines, Carson County School land, Tr. 130	Fish. 1,550 ft.
COTTLE COUNTY	
Explta. Co.'s No. 1 Richards	Drlg. 300 ft.
Explta. Co.'s No. 4 Matador Land & Cattle Co., C, Sec. 46, J. H. Stephens Sur.	Drlg. 1,600 ft.
Skelly Oil Co.'s No. 1 J. H. Cannon	H.F.W. 3,558 ft; fish. 3,610 ft.
Sun Oil Co.'s No. 1 T. B. Yarborough, 485 ft. S and 2,460 ft. E of NW cor. Sec. 551, Blk. H, W.&N.W. Sur.	C.O. 3,000 ft.
FLOYD COUNTY	
Explta. Co.'s No. 1 S. H. Boone, C. C. H. Johnson Sur.	S.D. 4,015 ft.
GRAY COUNTY	
Adams Oil Co.'s No. 2 Morse, 330 ft. from E line and 990 ft. from S line, Sec. 3, Blk. 26, H.&G.N.R.R. Sur.	Underreaming 8-in. csg. 1,600 ft.
B. S. Arnold's No. 1 J. E. Mingale, cen. east 160 acres, Sec. 212, Blk. B-2, H.&G.N. Sur.	Rig.
Arnold & Howell's No. 1 Turnex, C SW, Sec. 111, Blk. B-2	S.D. 2,224 ft. for pipe.
Biggs et als' No. 1 Morse, SW cor. Sec. 3, Blk. 26, H. &G.N Sur.	10,000,000 ft. gas 2,192-2,350 ft; C.O. 2,590 ft.
Camel Oil Co.'s No. 1 Harrah-B, 330 ft. each way from NW cor. NE, Sec. 150, Blk. 3, I.&G.N.R.R. Sur.	Cellar.
Crabtree Drlg. Co.'s No. 1 B. F. Talley, SW NE, Sec. 114, Blk. M-2, B.S.&F. Sur.	S.O. 2,400 ft. S.D. 2,590 ft.
Danciger et als' No. 1 Shaw, 1,000 ft. N and 330 ft. W SE cor. SW, Sec. 5, Blk. 1, A.C.H.&B. Sur.	35,000,000 ft. gas 2,290 ft; show oil 2,610-13 ft; S.D. 2,683 ft.
Danciger O. & R. Co.'s No. 3 J. S. Morse, 330 ft. each way from NE cor. SW, Sec. 2, Blk. 26, H.&G. N.R.R. Sur.	Drlg. 1,005 ft.
Danciger Oil Co.'s No. 1 Thut, 330 ft. from N and E lines E. 90 acres W½, Sec. 3, H.&G.N. Sur. (1 mile E of LeFors)	Flowed 30 bbls. after 120-qt. shot 2,745-2,860 ft.; to shoot again.

(Continued on Page 86)

WICHITA COMPLETIONS

Week Ended November 3, 1928

Archer County

F. Payne and others' No. 5 Parrish, made 56 bbls. at 1,585-96 feet. P. F. Gwynn's No. 1 Echols was dry and abandoned at 1,367 feet. Humble & Burns' No. 1 Langley was dry and abandoned at 1,150 feet. Panhandle Refining Co.'s No. 7 Prideaux-C made 2 bbls. at 648-54 feet. Rathke Oil Co.'s No. 7 Andrews was dry and abandoned at 1,000 feet. The Texas Company's No. 20 Richardson made 80 bbls. at 1,295-1,311 feet. Underwood Drilling Co.'s No. 2 Andrews was dry and abandoned at 950 feet. Lee Wilson's No. 1 Kunkel was dry and abandoned at 1,190 feet. Eastern Petroleum Corp.'s No. 7 Barry made 8 bbls. at 745-75 feet.

Cooke County

Sunflower Oil Co.'s No. 1 Dennis was dry and abandoned at 1,505 feet.

Jack County

Holman Heirs' No. 4 fee was dry and abandoned at 2,040 feet. Osage Oil & Vacuum Oil Co.'s No. 1 Clayton was junked at 485 feet. Ratblatt and others' No. 1 Mrs. Maxey was dry and abandoned at 560 feet.

Haskell County

Phillips Petroleum Co.'s No. 1 Moeller was dry and abandoned at 4,548 feet.

Throckmorton County

Erin Production Co.'s No. 1 Davis was dry and abandoned at 1,504 feet.

Wichita County

Bridwell & Heydrick's No. 2 Burnett made 45 bbls. oil and 20 bbls. of water at 1,925-31 feet. Hammon and others' No. 11 McCarty made 80 bbls. at 1,313-65 feet. Holbrook & Wood's No. 23 Kemp & Kempner made 50 bbls. at 1,191-97 feet. Mrs. R. A. Laning's No. 5 McCarty No. 3 made 60 bbls. at 1,303-48 feet. Ryan Petroleum Corp.'s No. 99 Nance swabbed 375 bbls. in 24 hours at 1,341-64½ feet. United Producers Co.'s No. 2 Hodges made 120 bbls. at 1,472-88 feet.

Wilbarger County

Baker and others' No. 7 Waggoner made 175 bbls. at 1,871-97 feet. Consolidated Oil Co.'s No. 1 Waggoner-G was dry and abandoned at 2,504 feet. Hines and others' No. 1 Ancell was dry and abandoned at 2,402 feet. Panhandle Refining Co.'s No. 1 Waggoner was dry and abandoned at 2,505 feet. Phillips Petroleum Co.'s No. 4 Dorothy Waggoner made 125 bbls. at 1,867-83 feet. Roxana Petroleum Co.'s No. 1 Milner was dry and abandoned at 2,020 feet. The Texas Company's No. 1 Waggoner-K was dry and abandoned at 2,242 feet.

Young County

Allday & Carter's No. 7 Johnson was dry and abandoned at 640 feet. Magnolia Petroleum Co.'s No. 4 Johnson was dry and abandoned at 850 feet. Petroleum Products Co.'s No. 1 Weichman was dry and abandoned at 1,254 feet. Riggs and others' No. 19 McKinley was dry and abandoned at 582 feet. Their No. 4 Sweet was dry and abandoned at 600 feet. Wise & Jackson's No. 1 Calvin made 7 bbls. at 585-90 feet. Maher's No. 1 Sedden was temporarily abandoned

(Continued on Page 136)

Wildcat Producer Opens Ward County

Reported Making Head of 50 Bbls. Thirty Miles from Production. Irion County Well Has 800 Feet of Oil in Hole

By James H. Dameron
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Nov. 5.—A wildcat well in Ward County, approximately 30 miles from the nearest production, may be the forerunner of a new pool for West Texas and open Ward County to production, and was the most noteworthy development in West Texas last week.

The well is being drilled by Shipley and associates and is No. 1 Hazlett, NW cor. SE Section 17, Block 5, H.&T.C. Survey, southeastern Ward County. From the start the well has been a "mystery test" and its present status is not definitely known generally at this time. It is known the well made at least one head good for 50 bbls. from a depth somewhere around 2,461 feet.

According to current reports Shipley and associates failed to get much assistance from operators when the well was started. Therefore little information was given out regarding the status of the test. Scouts are not permitted on the derrick floor and it is reported an area around the well has been roped off.

It is believed the salt was topped at 727 feet and the lime was found around 2,185 or 2,205 feet. Surface elevation is 2,503 feet. Various reports on the well's action were reported Monday. One company credited the well with making a 50-bbl. head from sandy lime at 2,461 feet. Another reported it making two 30-bbl. heads from a total depth of 2,450 feet, which is also the top of the pay. Still another company had a report that a trace of sulphur was in the oil.

The well is being drilled with a machine and the last string of pipe is 10-inch, which was set at 770 feet. It was reported Monday that tankage was being erected and that preparations were being made to drill deeper. This report was not verified, however.

Two Other Wells Drilling

Several companies have been giving particular attention to this area and have bought on the theory that a structural high will be found west of the Shipley well. Two wells are being drilled west and southwest of the Shipley well.

Talbot, Dittman and Atlantic Oil Producing Co. are drilling No. 1 Dorr in the SW quarter of Section 9, Block 5, which is approximately 4 miles southwest of the Shipley well. Going west and a little north about 5 miles Rector Oil Co. is drilling No. 1 Johnson, Section 10, Block 32. Some months ago Rector Oil Co. drilled a test in Section 30, Block 4, which had a show of oil and later abandoned. The general territory south and southwest of the Shipley well got quite a play several months ago.

The accompanying plat shows the ownership around the well as nearly accurate as can be obtained during the present lease trading period. Ownerships are considerably confused because sections do not run north and south. This has led to confusion regarding southeast and northwest quarters.

In the section on which the well was drilled two companies' records show they own the same acreage. Several other sections are confused in ownerships and in the event the Shipley well opens a new pool several law suits will probably result if the difficulties are not remedied.

Irion County Well

Another well to come into prominence over the week-end was Kingwood Oil Co.'s No. 1 Sugg, C Section 19, Block 1, H.&T.C. Survey, Irion County, which has 800 feet of 35 gravity oil in the hole from 3,368-75 feet. This well is in the territory where shallow shows have been found. Last week the Kingwood Co. took the well over from Charles W. West when it reached the contract depth at 3,000 feet.

The oil is coming from the big lime. When the pay was drilled into the fluid rose 1,800 feet in the hole. About 1,000 feet of salt water was being carried when the pay was found. Six-inch casing is being run to shut off the water and make a test this week.

Leck Area Operations

The Leck area in northern Winkler County is scheduled for a couple of completions within the next few days that may tell a big story for that area. Amerada Petroleum Corp.'s No. 1 Daugherty, NW cor. SE Section 3, Block 74, topped the lime at 2,646 feet and is waiting for cement to set at 2,652 feet. Atlantic and Kessler and Logan's No. 2 Leck, NE cor. SW Section 3, Block 74, found the top of the lime at 2,668 feet or plus 226 feet. Amerada Corp.'s Daugherty is 250 feet plus.

Going south to Cranfill & Reynolds' No. 1 Hendricks F, NW quarter Section 16, Block 26, about 2 miles north of Hendricks Pool production, is another well being followed closely. The well topped the salt at 1,985 feet and has a surface elevation of 2,874 feet. Monday the well was drilling anhydrite at 2,560 feet. It is now 314 feet above sea level and has only a fair chance of getting the lime high.

On down south in the O'Brien Pool in Block F, southern Winkler County, the discovery well in Section 50 remains the center of interest as delays lengthen the time for the other wells to reach the pay. The discovery well's fall in production is attributed to paraffin trouble and the well is being cleaned out.

ESTIMATED DAILY AVERAGE PRODUCTION WEST TEXAS
Week ended November 3

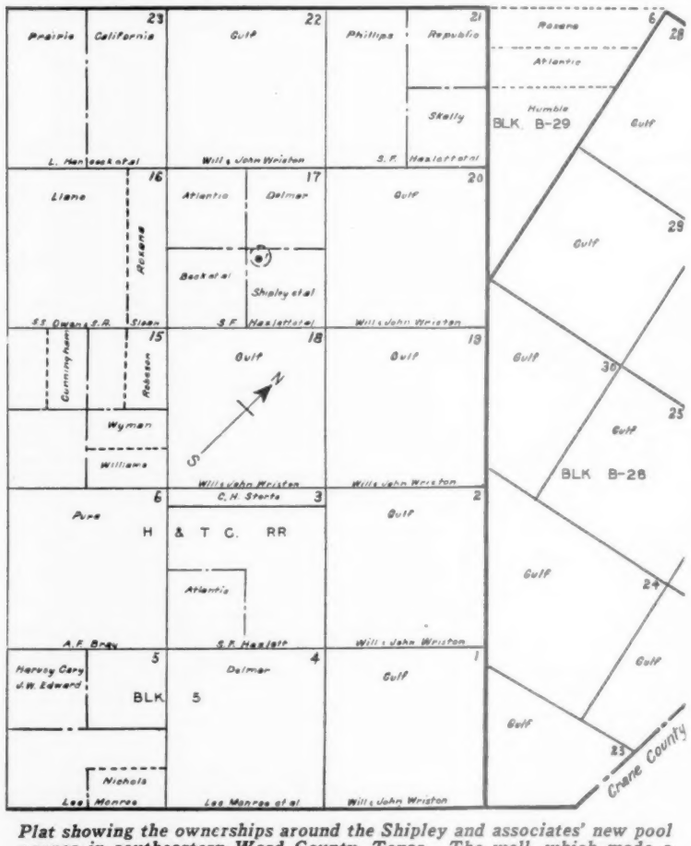
County—	Wells	Bbls.
Crane	268	40,884
Crockett	49	2,857
Ector	2	6
Fisher	5	925
Glasscock	17	726
Howard	196	31,884
Jones	43	3,519
Loving	7	29
Mitchell	141	2,473
Pecos	272	69,952
Reagan	224	17,674
Runnels	3	370
Scurry	5	31
Upton	293	14,437
Winkler	418	145,021
Total this week		330,788
Total last week		332,851
Difference		2,063

Hendricks Pool Completion

The outstanding completion in the Hendricks Pool was Pure Oil Co.'s No. 7 Hendricks C, Section 45, Block 26, which made 13,000 bbls. of pipe line oil from pay at 2,612-48 feet. The well is in the SE cor. NW SE. In the southern part of the pool Roxana and The Texas Company's No. 4 Cowden-A, SW NW Section 3, Block B-12, flowed 375 bbls. of pipe line oil per hour from pay at 2,812-95 feet.

Southern Crude Oil Purchasing Co.'s No. 3 Hutchins, NE SE Section 47, Block 26, on the eastern side of the field, is not showing as a big producer. It made between 300 and 400 bbls. from pay att 2,898 to 2,914 feet and is now shut

(Continued on Page 140)



Plat showing the ownerships around the Shipley and associates' new pool opener in southeastern Ward County, Texas. The well, which made a 50-bbl. head, is approximately 30 miles from the nearest production.

WILDCAT OPERATIONS IN WEST TEXAS

Week Ended November 3

Company, farm and location—	Remarks—
ANDREWS COUNTY	
Deep Rock Oil Co.'s No. 1 Hostetler, 2,310 ft. N and W of SE cor. Sec. 20, Blk. A-46	Fishing tools 80 ft.
BORDEN COUNTY	
Condor Oil Co.'s No. 1 E. A. Hall, 1,650 ft. S and W of NE cor. Sec. 5, Blk. 32, Twp. 3n, T.&P. Sur.	Fishing 898 ft.
E. L. Doheny, Jr., No. 1 J. J. Koonsman, 330 ft. S and E of NW cor. Sec. 2, Blk. 2, T.&N.R.R. Sur.	Hole full water 290-360 ft.; shut down 3,210 ft.; hole full water 3,050-85 ft.
Teas & Wheeler's No. 1 Long, 1,320 ft. N and E of Sec. 27, Blk. 30, T.&P. Sur.	Location
BREWSTER COUNTY	
Brewster Oil Co.'s No. 1 fee, 2,640 S and 2,598 E of NW cor. Sec. 45, Blk. G-15, G.C.&S.F.	Location
Cowden & Bowser's No. 1-A Jackson & Harmon, Sec. 1, Blk. 331, T.C.R.R. Sur.	Shut down 1,500 ft.
Forrest Oil Co.'s No. 1 Skinner, C SW SE Sec. 100 Blk. 2, G.C.&S.F. Sur.	Shut down 1,145 ft.
J. M. Hickey's No. 1 Jackson & Harmon, NE cor. Sec. 182, Blk. 9, G.H.&S.A. Sur.	Shut down 1,079 ft.
Reese & White's No. 1 Kimbale, C NE Sec. 204, Blk. 9, G.H.&S.A. Sur.	Shut down 2,009 ft.
Van McPhail's No. 1 McIntyre, SE cor. Sec. 59, Blk. 352, 7 mi. S of Alpine	Shut down 1,710 ft.
Williams and others' No. 1 Poncey, 459 ft. S and 1,862 ft. E Sec. 26, Blk. 214, T.&St.L.R.R. Co.	Shut down 500 ft.
COKE COUNTY	
Cates & Dennis' No. 1 Mimms, 2,500 ft. S and 330 ft. E of NW cor. Sec. 47, Blk. 4, T.&P.	Shut down 600 ft.
Lipan Oil Co.'s No. 1 E. C. Rawlings, Sec. 390, Blk. 1-A, H.&T.C. Sur. elev. 2,750 ft.	Straightreaming 2,836 ft.
Louisiana O. & R. Co.'s No. 1 Powers, 745 ft. S and 2,310 ft. E of NW cor. Sec. 156, Blk. 2	Drlg. 2,190 ft.
Mid-Kansas Oil Co.'s No. 1 W. E. Lackey, 330 ft. N and E of SW cor. Sec. 272, Blk. 1-A, H.&T.C.	Underreaming 920 ft.
CONCHO COUNTY	
Exploration Co.'s No. 2 Hartgrove, 906 ft. S and 985 ft. E of NW cor. Johann Scheuch Sur. No. 240	Rig.
Kimberlin et al's No. 1 Maloy, Sec. 319, Ludwig Winkle Sur.	Shut down 1,460 ft.
Posey's No. 1 Elvidge, C NW Sec. 39, H.&T.C.R.R. Sur.	Shut down 300 ft.
CRANE COUNTY	
C. C. Duffy et al's No. 3 Cowden Bros., 200 ft. N and W of SE cor. SW Sec. 18, Blk. X, C.C.S.D.&R.G.N.G. Sur.	Top salt 625 ft.; drlg. 2,160 ft.
Gulf Production Co.'s No. 56 J. T. McElroy, 2,102 ft. S and 48 ft. W of NE cor. of their lease, Section 201, Blk. F, C.C.S.D.&R.G.N.G.R.R. Co. Sur.	Drlg. 2,030 ft.
Gulf Production Co.'s No. 5 W. N. Waddell, 330 ft. N, and 280 ft. W of SE cor. NE Sec. 11, Blk. 25	Top salt 1,215 ft.; top lime 3,100 ft.; 1,000,000 ft. gas 3,115-34 ft.; set 6-in. casing 3,162 ft.
J. K. Hughes Dev. Co.'s No. 1 State Bank Commission, 2,310 ft. from NW line and 990 ft. from NE line Sec. 23, Blk 4, H.&T.C.R.R.	Top salt 525 ft.; top lime 2,480 ft.; 1,000 ft. sulphur water in hole; shut down 3,651 ft.
Simms-Atlantic's No. 2 University-B, 990 ft. N and E of SW cor. Sec. 34, Blk. 30, University Land	Drlg. 2,245 ft.

(Continued on Page 80)

New Wilcox Pool West of St. Louis

Oklahoma Production Declines as Water Encroachment Increases at Little River. Maud Area Becoming More Interesting

By J. L. Dwyer
Staff Correspondent, Oklahoma Fields

The optimism caused by a decrease of 13,000 bbls. in the weekly average output of Oklahoma was slightly offset by the discovery of a new Wilcox sand pool 1½ miles west of the present limits of the St. Louis Pool of Pottawatomie County. The new well was flowing slightly better than 100 bbls. an hour at the last report.

The drop of 13,000 bbls. was caused by a decrease in two of the flush regions of the State, the Greater Seminole area and the St. Louis Pool. Both of these regions experienced declines which were partly at least caused by the cold weather, and by the trouble some operators had with their air lift equipment in the St. Louis Pool.

The older pools of the Greater Seminole area continued their normal slow drop during the past week, and the Little River Pool, the newest of the group, showed the sharpest rate of drop. This was expected, as there have been no wells of importance completed at Little River.

The new well at St. Louis is the most important well to be completed in Oklahoma for some time. It is The Texas Company and the Fuhrman Petroleum Co.'s No. 1 Cherry, SW cor. NW NW Section 25-7-4, 1½ miles west of the present Wilcox sand production at St. Louis. The well found the sand from 4,230-60 feet, with the top of the pay at 4,257 feet. It started flowing 100 bbls. an hour, and at last reports was slightly increasing.

New Wilcox Pool

While this well undoubtedly opens a new Wilcox sand pool, the consensus of opinion is that the new region will be rather small in area. The reason for this opinion is that wells to the north and northwest have found water in the Simpson sand, and in this region the discovery of water in the Simpson has always been followed by water in the Wilcox. There has not been a single instance to the contrary to this rule. One-quarter of a mile to the east of the new well, the Gypsy Oil Co. drilled a Wilcox sand failure, and to the immediate south and slightly southeast the geological data on wells now drilling does not lend encouragement to the thought that any Wilcox oil will be found in those trends.

The only possibility of extending the new pool lies to the southwest of the new well, where there is ample room for a spread with nothing to discourage production, although there has been so little drilling in that direction that only a limited knowledge of the vicinity is available. At this time the prevailing geological belief is that the new pool will cover an area very limited and probably confined to 400 or 500 acres.

The Little River Pool, while on the decline, is still the most interesting part of the Greater Seminole area, and the increasing encroachment of water furnishes a topic of much interest. Ever since the big drilling campaign was completed in this region there has been some water encroachment on the edge wells of the pool, but the past 10 days have witnessed the increase in very large amounts of this edge water, while there are several sectors of the pool located on the more favorable geological parts which have now started making a good portion of water. The interesting part is that these wells are all located good and high. The central part of Section 14 is an example of this, and the water has started coming in rather rapidly in this spot for the past 10 days. This has been chiefly responsible for the decline of the Little River Pool.

The most interesting well in the region is T. B. Slick, Inc., No. 1 Wood, NE cor. SW Section 26-7-6, which is making some oil from the Cromwell sand after being plugged back from the Wilcox sand where it was a failure. The well first started flowing around 900 bbls. daily, and this amount increased, but the increase was principally water. The well early last week was flowing 500 bbls. of oil and 500 bbls. of water daily, but the latest gauges from the well show that it is now making 1,500 bbls. of fluid, which is two-thirds water and one-third oil. The fluid is treated, and the oil is saved, but the opinion is growing that much of the water is coming from the Cromwell sand where the oil originated.

On account of the water, there has been a natural reluctance on the part of the owners of adjacent leases to start any operations, and no new locations have been made. It is probable that some Cromwell sand production may be developed in this region, but not for the present.

An interesting well being drilled between the Little River and St. Louis Pools is the Empire Oil & Refining Co.'s No. 1 Harjo, SW cor. NE SW Section 17-7-6 which topped the Viola lime at 4,450 feet, and accordingly should reach the top of the Wilcox sand close to 4,600 feet. This well has been especially interesting because it was at first thought that the formations would become higher when they were encountered a sufficient distance west of the Wilcox low which was found on the east side of Section 15. The Empire well seems doomed to failure, as 4,600 feet seems too low for any hope of production, and the well is not regarded as having much chance for Wilcox production.

Maud Area

The Maud area around Township 8-5 should have some interesting results this week, as the Amerada Petroleum Corp.'s No. 1 Hallum, NE cor. SW Section 8-8-5, is nearing the sand. This well has some oil standing in the hole from the Misener sand found 4,043-45 feet. At this depth it is calculated to be running about 25 feet higher than the Gypsy Oil Co.'s No. 1 Bourassa, which is half a mile to the west. The Gypsy well was good for 2,200 bbls. per day when it was drilled in, and the output was completely pinched in under the shut down agreement. The Amerada well may establish the trend of a good pool in the Misener from which the Bourassa well produced.

The discovery well of this region is the Barnsdall Oil Co.'s No. 1 Fife, NE cor. NW Section 14-8-5. This well went entirely dead, but came back after swabbing. The well has recently been swabbing 1,100 bbls. per day. The owners have just completed their air lift plant for the well, and it is being placed on air. It seems to be making slightly more oil on the air lift than it did on the swab

Another well of disappointing output is the T. B. Slick Inc.'s No. 1 Campbell SE cor. NW Section 6-9-6, in the northeast extension of the Earlsboro Pool. This well has 75 feet of oil and a show of water standing in the hole from the Wilcox sand at 4,332-46 feet. It is an offset to a well which made 2,000 bbls. a day when first completed.

An interesting note in the Greater Seminole area last week was the deepening of the Mid-Continent Petroleum Corp.'s No. 1 Smith, which started the activity east of the Little River Pool. This well is NW cor. NW NE Section 5-7-7, and it had the Wilcox sand 4,425-27 feet. Last week it was deepened 1 foot to a total depth of 4,428 feet and started flowing 130 bbls. an hour. The well had been making 1,400 bbls. per day, and it is now producing 2,100 bbls. per day.

Pipe Line Situation

The pipe line situation in the Greater Seminole area shows slight change. The daily average pipe line runs for the week ending November 3 follow:

	Bbls.
Barnsdall	2,713
Champlin	9,868
Continental	2,846
Consolidated	502
Mid-Cont. Pet.	10,644
Empire	14,244
Gulf	36,224
Magnolia	25,979
Oklahoma	50,470
Prairie	63,045
Pure	3,768
Shaffer	4,683
Shell	11,730
Sinclair	30,252
Texas	18,341
Tidal	10,071
White Oak	1,960
Total	297,340

The tank car shipments out of the Greater Seminole area for the same week were:

	Bbls.
Amerada	2,680
Carter	5,464
Pure	5,206
Total	14,350

The daily average pipe line runs out of the St. Louis Pool for the same week were:

	Bbls.
Continental	5,205
Gulf	5,306
Independent	11,386
Magnolia	25,080
Oklahoma	2,486
Prairie	41,801
Shell	3,480
Sinclair	35,622
Total	130,096

St. Louis Production

The detailed production of the larger leases in the St. Louis Pool of Pottawat-

WILDCAT OPERATIONS IN OKLAHOMA

NORTHERN OKLAHOMA

LATTIMER COUNTY

Limestone Oil & Gas Co.'s No. 1 McMurray, SW cor. SW Sec. 15-5-18 ..... Shut down 1,800 ft.

GRANT COUNTY

J. V. Bailey and others' No. 1 Maddox, C SE Sec. 18-27-5w ..... Dry and abandoned 5,058 ft.
Cowden and others' No. 2 Vollmer, CEL NE SW Sec. 22-25-4w ..... Shut down 5,640 ft.

HARPER COUNTY

Hoffer Oil Co.'s No. 1 Cooper, NW cor. SE SE Sec. 12 25-22w ..... Shut down 4,130 ft.

KAY COUNTY

Geo. L. Miller and others' No. 1 Home, NW cor. SE Sec. 11-24-3 ..... Dry and abandoned 4,031 ft.
Lario Oil Co.'s No. 1 McKay, NW NE Sec. 14-29-1 ..... Underreaming 2,622 ft.
Tonkawa Development Co.'s No. 1 McDaniels, SE cor. SE Sec. 15-25-1w ..... Wilcox sand 4,915-4,926; dry and abandoned.

WOODWARD COUNTY

Otstot Development Co.'s No. 1 Simmons, SE cor. SE Sec. 32-24-17w ..... Shut down for pipe 1,490 ft.
Sharon Oil Co.'s No. 1 Elmore, SW cor. SW Sec. 25 21-21w ..... Rig blown down 3,025 ft.
Billy's Oil Co.'s No. 1 Watt, C SE Sec. 9-23-20w ..... Shut down 500 ft.
Burgoyne Brothers' No. 1 Merklin, SW cor. SE NE Sec. 16-21-19w ..... Underreaming 1,810 ft.
Farrond and others' No. 1 Johnson, SW cor. SW Sec. 1-22-17w ..... Underreaming 1,560 ft.

GARFIELD COUNTY

E. L. Love and others' No. 1 White, SE cor. NW Sec. 9-24-6w ..... Shut down 4,755 ft.
Marland and Barnsdall's No. 1 Looman, NE SE Sec. 9-20-4w ..... Shut down 5,785 ft.
Marland Oil Co.'s No. 1 Miller, SW cor. SW Sec. 12-20-4w. Shut down at 4,575 ft. waiting on test Sec. 9-20-4w.

NOBLE COUNTY

Alco Royalty Co.'s No. 1 Waltermire, SE cor. NW Sec. 33-21-1w ..... Location.
Marland Oil Co.'s No. 1 Kidd, NW cor. SW Sec. 32-20-1w ..... Shut down at 5,290 ft.; plugging back to show oil 1,886 ft.

KINGFISHER COUNTY

Galt-Brown Oil Co.'s No. 1 Wolff, NW SE Sec. 6-16-7w.. Completed contract 4,515 ft.; shut down.
McKinney & Crawford's No. 1 Sturgeon, NE cor. SW Sec. 27-16-6w ..... Drlg. 4,650 ft.

LOGAN COUNTY

Champlin Refining Co.'s No. 1 Clark, SE cor. SW Sec. 8-19-4w ..... Dry and abandoned 6,726 ft.
Margay Oil Co.'s No. 1 Cole, SE cor. SW NE Sec. 24-18-5w ..... Rig.
Haley & Smith's No. 1 Guler, SE cor. SW Sec. 33-18-3w.. Drlg. 5,060 ft.
J. L. Donahoe's No. 2 fee, SW cor. NW SE Sec. 21-18-2w.. Drlg. 4,710 ft.

BLAINE COUNTY

Lowen and others' No. 1 Unknown, NW cor. SW NW Sec. 27-16-11w ..... Spudded and shut down; renewing leases.
W. J. Donnelly, trustee's No. 1 Dicken's NE cor. SE Sec. 26-15-12w ..... Drlg. 3,940 ft.
Ragland and others' No. 1 Unknown, C NW SW Sec. 13-19-10w ..... Rig.

LINCOLN COUNTY

Phillips Pet. Co.'s No. 1 Stephens, SE cor. NW Sec. 29-12-3 ..... Location.

McLAIN COUNTY

Empire Oil & Ref. Co.'s No. 1 Bonner, SE cor. NW NW Sec. 29-5-3 ..... Location.

MUSKOGEE COUNTY

Elk Drilling Co.'s No. 1 Jones, SW cor. SW Sec. 34-13-17 ..... Shut down 400 ft
L. T. Haney's No. 1 Mitchell, SE cor. NW SE Sec. 33-13-18 ..... Shut down 2,290 ft.
J. L. Slusher's No. 1 Nave, NE cor. SW NW Sec. 20-15-20 ..... Shut down 732 ft.

HUGHES COUNTY

Galt-Brown Oil Co.'s No. 1 Burrey, C NW NE Sec. 14-4-9. Dry and abandoned 4,101 ft
Bauer and others' No. 1 Penn, NW cor. SW NE Sec. 1-8-10 ..... Sand 2,842-50, 8,000,000 ft. gas flowing salt water; underreaming casing.
Noble Oil & Gas Co.'s No. 1 Wickett, SE cor. SE Sec. 20-5-9 ..... Dry and abandoned 3,015 ft
E. W. Whitney and others' No. 1 Moore, SE cor. SW Sec. 17-5-9 ..... Drlg 2,420 ft.
Pure Oil Co.'s No. 1 Fixico, NE cor. SW Sec. 18-8-9..... Drlg. 4,105 ft.
Howard Petroleum Co.'s No. 1 Gilbert, NW cor. SE Sec. 25-8-10 ..... Underreaming 3,240 ft.
Gypsy Oil Co.'s No. 1 McGirt, NE cor. NW SW Sec. 21-6-8 ..... Sand 3,310-30 ft., corrected. hole full water.
T. B. Slick, Inc.'s No. 1 Epperly, NW cor. NE NW Sec. 32-6-8 ..... Dry in Wilcox, 4,655 ft., plugging back.

(Continued on Page 100)

omie County on Monday, November 5, follows:

Barnsdall Oil Co.:	
1 Stahl	1,132
Gypsy-Sinclair et al:	
1 and 2 Stahl	9,888
5 Stahl	3,136
6 Stahl	1,920
Phillips Pet. Co.:	
2 Stahl	*3,172
3 Stahl	892
Sinclair Oil & Gas Co.:	
1 Nadash	720
Magnolia Pet. Co.:	
1, 2 and 3 Hembree	†1,673
4 Hembree	3,794
1, 2, 3, 4 and 6 H. E. Youts	6,110
2 C. A. Youts	521
1 T. Fyke A	928
1 T. Fyke B	1,426
T. B. Slick, Inc.:	
1 Hembree	3,057
2 Hembree	5,040
3 Hembree	5,005
4 Hembree	5,615
1 Youts	845
2 Youts	3,335
3 Youts	895
Mid-Cont. Pet. Corp.:	
1 Guinn	1,540
Independent Oil & Gas Co.:	
1 Youts	6,390
2 Youts	1,810
3 Youts	3,910
4 Youts	2,895
5 Youts	3,095
6 Youts	935
7 Youts	1,690
8 Youts	2,265
Prairie Oil & Gas Co.:	
1 Wolf	750
2 Wolf	1,400
3 Wolf	1,550
Total barrels from 40 wells	87,434

*Cutting 18 per cent. †Off air.

The production of the Greater Seminole area by companies and leases on Thursday, November 1, follows:

Little River Pool

Company, farm—	Location	Wells	Prod.
Amerada:			
Nitey	2- 7-6	3	1,005
Amerada-Wilcox:			
Fore	35- 8-6	2	310
Barnsdall:			
Cotcha	23- 7-6	2	1,310
Hotulke	22- 7-6	2	476
Walker	4- 7-6	1	545
Blackwell:			
Baker	11- 7-6	4	1,860
Nitey	35- 8-6	6	1,431
Talley	14- 7-6	3	790
Byran & Emery:			
Walker	4- 7-6	1	13
Carter:			
Cotcha, M.	23- 7-6	3	340
Cudjo, L.	23- 7-6	1	25
Fish	36- 8-6	4	560
Harjo, C.	11- 7-6	2	6,654
Harjo, M.	13- 7-6	2	1,015
Jackson	11- 7-6	4	1,755
Larney	24- 7-6	2	1,275
Lena	10- 7-6	1	1,040
Moore	11- 7-6	2	965
Tewee	14- 7-6	5	4,054
Thomas	11- 7-6	1	425
Wilson	12- 7-6	2	675
Champlin:			
Tewee	14- 7-6	2	2,361
Continental:			
Cosar	36- 8-6	7	2,030
Cosar, M.	25- 8-6	1	410
Continental & Fisher:			
Milsey	11- 7-6	2	2,705
Empire:			
Charty	24- 7-6	1	748
Coker	13- 7-6	1	....
Sandlin	3- 7-6	1	11
Gypsy:			
Brown, C.	33- 8-6	2	847
Brown, M.	33- 8-6	1	1,202
Campbell	33- 7-6	2	22
Conard	22- 7-6	2	882
Cosar, M.	25- 8-6	1	....
Cosar, W.	36- 8-6	2	155
Cotcha	23- 7-6	4	1,642
Denmark	11- 7-6	4	3,222
Hulhoke	14- 7-6	10	5,620
Mungee	1- 7-6	1	17
Pottie	35- 8-6	4	890
Renton	11- 7-6	3	920
Independent:			
Davis, R.	13- 7-6	3	1,703
Tewee	14- 7-6	6	3,470
Williams	15- 7-6	1	915
Independent & Highway:			
Harris	23- 7-6	8	3,203
Independent & White Eagle:			
Davis	2- 7-6	4	975
I. T. I. O.:			
Campbell	1- 7-6	1	174
Dungan	35- 8-6	3	1,168
House, M. A.	1- 7-6	1	21
House, W. E.	1- 7-6	1	54
House "B"	2- 7-6	4	780
Hull	26- 8-6	3	624
Jackson	1- 7-6	3	882
McCulla	1- 7-6	3	566
Nitey	2- 7-6	6	237
Phoebe "A"	36- 8-6	3	216
Phoebe "B"	36- 8-6	4	178
Reed	1- 7-6	1	....
Sokethecha	1- 7-6	3	543
Magnolia:			
Cruse	2- 7-6	4	633
Denby	11- 7-6	3	1,608
Dixon	31- 8-7	1	....
Harjo, A.	14- 7-6	2	315
Harjo, B.	14- 7-6	2	1,224
Pottie	35- 8-6	4	633
Reed, E.	31- 8-7	1	28
Reed, I.	22- 7-6	3	1,160
McCulloch & Sands:			
Harrison	4- 7-6	1	56
Mid-Continent:			
Brunner	11- 7-6	4	2,280
Eleck	23- 7-6	1	420
Smith	5- 7-7	1	1,525
Wadsworth	36- 8-6	7	325
W. B. Pine:			
Hoyecha	26- 8-6	6	2,907
Pine-Phillips:			
Pottie	35- 8-6	2	400
Prairie:			
Chilcoat	25- 8-6	3	920
Dungan	35- 8-6	1	40
Gibson	14- 7-6	6	2,775
Harris	14- 7-6	3	1,635
House	2- 7-6	4	385
Moppin	24- 7-6	1	405
Talley	14- 7-6	4	2,215
Prairie & Amerada:			
Sunny	14- 7-6	8	6,310
Pure:			
Cotcha	14- 7-6	9	4,657
Harjo	11- 7-6	4	1,269
Reiter-Foster:			
Bunyard	14- 7-6	4	3,405
Roxana:			
Caesar	11- 7-6	1	41
Hotulke	23- 7-6	4	1,155
Johnson	13- 7-6	3	2,385
Shaffer:			
Narcome	36- 8-6	2	176
Sinclair:			
Cosar	30- 8-6	3	770
Haney	12- 7-6	1	110
Tewee	14- 7-6	2	2,175
Sinclair & Kingwood:			
Pompey	24- 7-6	1	125
Skelly:			
Carl	14- 7-6	2	2,000
Slick:			
Reed	13- 7-6	1	895
Williams	15- 7-6	2	717
Wood	26- 7-6	1	510
Snowden-McSweeney:			
Tiger	13- 7-6	3	1,530
Superior:			
Potulka	31- 8-6	1	5
Sokethecha	1- 7-6	1	....
Texas:			
Brooks	25- 8-6	1	105
Coker	1- 7-6	3	540
Janey	11- 7-6	3	1,335
Texas & Independent:			
Hotulke	23- 7-6	3	1,590
Tidal:			
House	1- 7-6	3	475
Johnson	1- 7-6	1	25
Twin States:			
Lowe	25- 8-6	1	135
Total		294	120,244

Maud Pool

Barnsdall:			
Fife	14- 8-5	1	575
Gypsy:			
Bourassa	7- 8-5	1	....
I. T. I. O.:			
Simpson	10- 8-5	1	54
State	16- 8-5	1	....
Pure:			
Lindly	18- 8-5	1	....
Total		5	629

Mission Pool

Carter:			
Fuswa	18- 8-6	1	....
Micco	8- 8-6	1	....
Gypsy:			
Baby	6- 8-6	1	....
Barkus	6- 8-6	1	....
Dosar	7- 8-6	1	....
Mission	5- 8-6	1	....
Mosar	1- 8-6	1	....
Mariland:			
Maines	7- 8-6	1	....
Mid-Kansas:			
Moore	7- 8-6	1	45
Roxana:			
Maines	7- 8-6	1	....
Slick:			
Tiger	13- 8-5	1	....
Twin States:			
Hayes	8- 8-6	1	50
Total		11	95

Bowlegs Pool

Amerada:			
Roscoe	15- 8-6	8	1,385
Atlantic:			
Baker	10- 8-6	4	440
Fleet	23- 8-6	3	290
Grayson	13- 8-6	4	520
Jones, A.	16- 8-6	2	65
Jones, C.	9- 8-6	1	152
Barnsdall:			
McNac	28- 8-6	1	23
Murrow	11- 8-6	4	429
Carter Oil:			
Bowlegs	15- 8-6	4	923
Burden	23- 8-6	2	175
Harjoche	14- 8-6	6	648
Hilly	23- 8-6	3	630
Jones	11- 8-6	4	568
Walker	15- 8-6	4	538
Wise	23- 8-6	11	1,870
Dixie:			
Culley	11- 8-6	1	95
Empire:			
Lacy	14- 8-6	6	482
Wise	23- 8-6	2	212
Gypsy:			
Bowlegs	22- 8-6	1	210
Bradley	9- 8-6	1	2
Cumsey	10- 8-6	4	802
Grayson	13- 8-6	4	452
Harjoche	10- 8-6	3	880
Jones	11- 8-6	1	112
Walker	15- 8-6	7	905
Wise	23- 8-6	2	190
I. T. I. O.:			
Barnett	24- 8-6	2	285
Barnett "B"	23- 8-6	1	220
Billington	22- 8-6	5	393
Bowlegs	22- 8-6	10	1,501
Davis	13- 8-6	4	737
Fay	13- 8-6	9	1,689
Goforth	15- 8-6	12	1,264
Livingston	15- 8-6	10	2,313
Lizzie	13- 8-6	3	312
Walker	15- 8-6	8	1,818
Williams	12- 8-6	1	231
Wilmott	15- 8-6	4	318
Work	24- 8-6	1	113
Youngblood	24- 8-6	2	86
Magnolia:			
Davis	13- 8-6	3	476
Davis, M.	13- 8-6	1	8
Hammond	10- 8-6	7	925
Rhodes	12- 8-6	5	1,558
Van Buskirk	9- 8-6	2	356
McCulloch:			
Bowlegs	22- 8-6	2	250
Mid-Continent:			
Baker	10- 8-6	4	642
Bowlegs	22- 8-6	1	6
Smith	12- 8-6	6	575
Minnehoma:			
Bowlegs	15- 8-6	4	345
Prairie:			
Gahagan	23- 8-6	4	405
Harber	10- 8-6	8	2,605
Jones	11- 8-6	4	325
Templeton	12- 8-6	5	2,045
Whitney	23- 8-6	4	500
Pure Oil:			
Reed	14- 8-6	14	3,484
Strother "D" 11 &	14- 8-6	4	322
Strother "F"	10- 8-6	7	2,366
Roxana:			
Taylor	16- 8-6	5	56
Shaffer:			
Lacy	14- 8-6	3	420
Sinclair:			
Cumsey	10- 8-6	4	1,155
Ellen	11- 8-6	8	961
Harjo	14- 8-6	8	915

(Continued on Page 79)

GAS IN RUSH COUNTY WILDCAT FEATURE OF THE WEEK IN KANSAS

By J. L. Dwyer
Staff Correspondent, Kansas Fields

The finding of gas production in the Rush County wildcat well of Danciger-Valerius-Cheney was the most important news of the week in Kansas. This well previously had some little gas and oil further up the hole, but this week 3,500,000 feet of gas was found in a sandy lime from 3,575-76 feet. The gas was dry, according to reports from the field, and the well is shut down for casing. The well is No. 1 Schuerman NW cor. SE NW Section 27-17-17w, and has been closely observed since the finding of some oil in what was thought to be the Oswalt lime three weeks ago.

The showing of this well while not sufficient to make a commercial producer has at least given added interest to the region. The well will be cased and it will probably be the latter part of the week before it is drilled deeper.

The latest attempt to extend the Keighley Pool of Butler County is a failure. It is Davidson and others' No. 1 James, SW cor. NE NW Section 5-28-7, which missed the Bartlesville sand altogether, and was drilled to the top of the lime with a total depth of 2,800 feet at which point it will be abandoned.

The Lost Springs Pool of Marion County is slipping slightly in production and for the week ending November 3 had a daily average of 1,132 bbls. from 46 wells.

The Churchill Pool of Sumner County for the same period, had a daily average output of 8,534 bbls. from 75 wells, and the Oxford Townsite Pool in the same county produced 7,912 bbls. from 100 wells for the same week.

In Sedgwick County, the Gypsy Oil Co.-Marland Production Co. and Bu-Vi-Bar Petroleum Corp.'s No. 1 Wright, in Section 12-26-1w, which opened the Sedgwick-Harvey play, averaged 1,580 bbls. per day last week.

Butler County

Davis & Hazlett's rig is up for No. 9 Lewis, SE cor. NW SW, Section 3-27-6. Rosenthal and others moved the rig out for No. 12 Schaffer, NE cor. SW SE, Section 4-27-6. Billy Wentz' No. 1 Eckel, NW cor. SW NE, Section 17-27-7, is rigging.

Cowley County

Kentucky Nitrogen & Oxygen Co.'s No. 1 Day, CEL SW SW, Section 7-33-7, is rigging.

Elk County

Sherman and others' No. 2 Armstrong, SW cor. NW, Section 10-31-10, is spudding. Sonner Gas Co.'s No. 1 Townsite, Block 44, Lots 3 and 4, NW cor. SE SW, Section 10-31-10, is rigging. Ozark Drilling Co.'s No. 1 Townsite, Block 3, Lot 2, NW cor. SE NW, Section 10-31-10, was completed for 10 bbls. in sand at 1,979-2,023 feet. Pure Oil Co.'s No. 2 Webb, NW cor. SW, Section 13-31-10, is dry and abandoned at 1,754 feet.

Greenwood County

Simmons and Amerada Petroleum Corp.'s No. 7 Ellis, SE cor. SW, Section 26-23-11, is a rig under construction. C. Kayser made location for No. 1 Moore, SW cor. Section 5-26-10. Skelly Oil Co.'s No. 7 Schwab, NW cor. SE NE, Section 30-22-13, has been completed for 35 bbls. in sand at 1,665-85 feet.

Marion County

Roxana Petroleum Corp. has the rig on the ground for No. 1 Funk, NW cor. SW, Section 7-19-3. Empire Oil & Refining Co.'s No. 1 Jensen, SE cor. NW, Section 26-22-5, is rigging.

Sedgwick County

Lewis and others moved the rig out for No. 1 Taylor, NW cor. NE, Section 23-27-2.

Lane County

Blankenship Petroleum Co. is erecting the rig for No. 1 Shaffer, NE cor. Section 24-16-28w.

Morris County

Moseley and others' No. 1 Cessnum, SW cor. NE, Section 24-16-9, is fishing at 1,740 feet.

McPherson County

Merriman and others' No. 1 Anderson.

(Continued on Page 119)

KANSAS WILDCATS

BARBER COUNTY

Barbara Oil Co.'s No. 1 Blunk, C NE NW Sec. 20-34-13w..Drlg. 4,655 ft.
Rolland et al's No. 1 Pickens, NE cor. NW NE Sec. 27-30-14w ..... Drlg. 4,010 ft.
Skelly Oil Co. et al's No. 1 Winter, C E half Sec. 17-31-12w ..... Dry and abandoned 4,530 ft.

BARTON COUNTY

Everett & Wiley's No. 1 Ward, NW cor. SW Sec. 12 20-13w ..... Shut down 3,948 ft.
McJilton et al's No. 1 Evanston, SE cor. NW Sec. 34-17-11w ..... Rig.
Mid-West Exploration Co.'s No. 1 Karst, SW cor. SW Sec. 11-16-15w ..... Drlg. 2,015 ft.

BUTLER COUNTY

O. H. Fleming et al's No. 1 Brainard, NE cor. NW Sec. 22-24-3 ..... Drlg. 3,123 ft.
LaRobb et al's No. 1 Bronsenger, NE cor. SW Sec. 24-27-3 ..... Rig.
Swartz et al's No. 2 Randall, NW cor. NE NW Sec. 22-24-4 ..... Casing 905 ft.

CHASE COUNTY

Griener & Fowler's No. 1 Carson, NE cor. NE Sec. 9-21-7 ..... Shut down 3,162 ft.

COWLEY COUNTY

Jones & Hall's No. 1 Shapland, NE cor. NW SE Sec. 20-30-6 ..... Drlg. 3,014 ft.
Roth & Faurot's No. 1 Ridding, SE cor. NW Sec. 31-32-6 ..... Drlg 1,920 ft.
Roxana Pet. Corp.'s No. 1 Gailey, NE cor. NW SW Sec. 18-35-3 ..... Drlg. 2,150 ft.
Pyle & Sutter's No. 1 Lindstrom, SW cor. NE Sec. 9-35-4 ..... Fishing 900 ft.
Prairie Oil & Gas Co.'s No. 1 Shane, SE cor. NW Sec. 13-32-3 ..... Shut down 3,410 ft.
Empire-Marland-Twin States' No. 1 Feaster, NW cor. NE Sec. 36-32-5 ..... Drlg. 700 ft.
E. B. Shawver's No. 1 Cook, NE cor. NE Sec. 20-30-6..... Drlg. 2,820 ft.
Roth & Faurot's No. 1 Ehmke, NE cor. NW Sec. 14-32-3. Dry and abandoned 3,466 ft.
Crow & White's No. 1 Powers, C NW NE Sec. 9-32-5..... Sand 714-734 ft., 1,000,000 ft. gas.
Slick & Martin's No. 1 Aspaugh, SW cor. NE Sec. 27-31-5 ..... Drlg. 2,350 ft.
J. B. Markey's No. 1 Tatum, SE cor. SW Sec. 11-31-6..... Shut down 500 ft.
Jones & Hall's No. 1 Shapland, SE cor. NW SE Sec. 20-30-6 ..... Shut down 3,396 ft.

DICKINSON COUNTY

Empire G. & F. Co.'s No. 1 Duffy, NE cor. SW SE, Sec. 3-12-3 ..... Dry and abandoned 2,982 ft.

ELLIS COUNTY

Derby Oil Co.'s No. 1 Weigel, C NW Sec. 25-12-17w ..... Dry and abandoned 4,068 ft.
Rush Oil Co.'s No. 1 Gatewood, NW cor. NW Sec. 4-15-20w ..... Shut down 1,100 ft.
Transcontinental Oil Co.'s No. 1 Boetcher, NW cor. SE SW Sec. 21-13-19w ..... Drlg. 3,080 ft.
Finney & Weiner's No. 1 Freeman, SE cor. SW Sec. 24-15-20w ..... Rig.
Labette Oil Co.'s No. 1 Urban, NE cor. NW NW Sec. 19-15-16w ..... Drlg. 1,350 ft.
James A. Brouk et al's No. 1 Gorham estate, C SE SE Sec. 35-15-16w ..... Drlg. 2,080 ft.
Derby Oil Co.-Empire Oil & Ref. Co.'s No. 1 Krause NW cor. SW SW Sec. 17-14-19w ..... Drlg. 3,075 ft.

(Continued on Page 102)

Old Well at Bethany Stages Blowout

New Producing Horizon of Limited Extent Believed Existent in Panola County, Texas. Salt Water Appears at Shongaloo

By D. H. Bancroft
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La. Nov. 5.—Bethany gas field in Panola County, Texas, was the source of the only bit of news of particular interest in the Shreveport division this week of a positive character, for while developments in the Shongaloo gas district of Webster Parish where some oil has been obtained, and Champagnolle's eastern extension attracted attention, the cause was dust and salt water, the first in that locality since its development began. The Bethany excitement was a blowout of an estimated 30,000,000 feet of gas in an oil well that had been deepened. Two or three years ago Arkansas Natural Gas Co. completed No. 1 Crenshaw in the B. C. Jordan Survey as a 15-bbl. pumper. at 1,952 feet in the second sand. Some time ago D. Thomason acquired the lease and has drilled several wells and recently went back to this old well which he listed as No. 11 Crenshaw and was drilling at 2,460 feet when it blew in hoisting 17 fourbles of drill stem through the derrick which was partially wrecked and at last reports was still running wild.

The depth at which the blow-out occurred indicates a new producing formation for while four sands have been prospected in Panola none was found at this depth which is below the Woodbine and above the red beds. In the years the field has been exploited numerous wells have been drilled as far as 3,200 feet in all directions from this one but have not found anything at this depth which leads to the opinion that the new production is coming, probably, from a formation of limited extent.

Salt Water at Shongaloo

Appearance of salt water in three wells in the Shongaloo District was somewhat upsetting as failures have been rare in that locality recently. One of the three, Bruce Richardson's No. 1 Mayfield, in Section 30-23-9, abandoned at 2,776 feet, caused considerable attention last June when it filled up 800 feet with 30 gravity oil from 6 feet of sand. Later on, while waiting for standard rig to pump, salt water appeared and nothing further was done toward putting it on the pump and the 1,000 feet of fluid in the hole showing more and more water, it was abandoned altogether. Magnolia Petroleum made a drill stem test on No. 1 Lewis in Section 25-23-10 at 3,142 feet about 400 feet below the gas horizon, and its No. 1 Oakes-Roseberry tested salt water with a show of oil and gas in the producing sand at 2,777 feet. Jones and others' No. 1 Elkins in Section 33-23-9 tested 1,000,000 feet of gas at 2,690 feet and shut down for orders.

The shallow sand of the discovery area of Champagnolle developed a small producer, 35 bbls. in Magnolia Petroleum Co.'s No. 5 Carroll, an edge well in the NE cor. SW NE Section 1-17-14, at 2,980 feet while a test of the deep sand a quarter-mile south showed a little oil with salt water at 3,174 feet. This was Ohio Oil Co.'s No. 4 Crain, completed as a gas and oil producer some time ago in the shallow sand. The same company's well on the Ward land in the NW cor. NW SW Section 14-17-14 in the southeast corner of the deep sand area made a test of the shallow pay at 2,812-20 feet, got salt water, and is going deeper. The southernmost well in the new eastern extension, E. M. Jones' No. 1 Sample in the SW cor. SE NW Section 7-17-13 is also the first to show any alarming symptoms of being a failure. It was dry at 3,300 feet and is coring. This is just 2 feet less than the total depth of Lion Oil Refining Co.'s 700-bbl. No. 4 Nash, completed last week in Section 6-17-13.

Arkansas Natural Gas Corp. added the third to a string of successful completions in the Johnson County Gas Field, No. 1 O. L. Hudson in Section 14-10-24 being a 7,000,000-foot producer at 2,795 feet with a rock pressure of 1,050 pounds. Other completions of the week were Nick Barbee's No. 5 Furrh in the James Short Survey in the Waskom Gas Field, 1,000,000 feet, total depth 2,381 feet; Feazel & Smith's No. 1 Steele, Section 16-20-4 Union Parish, 12,000,000 feet of gas, total depth 2,155 feet.

Show in Deep Test

Dixie Oil Co.'s No. 1 Gilbert in Section 27-21-5 Claiborne Parish was reported to have had a show of oil. It topped the Blossom sand which produces in Haynesville at 2,874 feet and is drilling at 2,905 feet but did not have any show. The same company's deep test in Pine Island, No. 92 Dillon in Section 13-21-15, the deepest drilling well in Louisiana at this time, had a good show of gas in 5 feet of lime and shell at around 6,100 feet and is preparing to set 4½-inch casing for a test. It it makes a well it will be the deepest producer of either oil or gas in the State.

The Palmer Corp. is reaming No. 1 Carroll Land Co., Section 21-19-11 East Carroll Parish preparatory to setting 6-inch casing to protect the hole from heaving which gave them considerable trouble in their No. 1 Hamley, Section 27-20-11. The bottom is in hard sand rock at 2,806 feet. G. E. Jordan's deep test in the Monroe Gas Field, No. 1 Wall in Section 12-18-3 Ouachita Parish, has reached the red beds and is drilling at 3,128 feet. The old Bull Bayou Field in Red River Parish is to have another well, Odell & Lawton having made location in Section 25-13-11 for No. 4 on their Richardson lease.

Richland Parish gas field's second crater well, Feazel and others' No. 1 Pardue in Section 6-15-6 which blew out around the casing and in sand boils in Beeuf River 100 feet away two months ago is still blowing while funds are being raised to undertake killing it. Meanwhile Ouachita Natural Gas Co. has shut down No. 2 Pardue, a couple of locations away and will drill No. 3 as an offset to the crater to save what gas he can from his lease and possibly assist in killing the crater.

Daily average runs from the field in the division took another small decline this week, due entirely to declines in Louisiana districts for while all Arkansas pools' runs except Champagnolle's were either less than last week or stationary, Champagnolle's increase of 450 bbls. was enough to balance the decline and leave a margin of 15 bbls. Total daily average runs from the division were 121,465 bbls. which was 345 bbls. under last week's. Louisiana pools declined 360 bbls.

With Smackover runs steadily declining some refiners are offering premiums in effecting new contracts. Lion Oil Refining Co. has contracted with Magna Production Co. for 1,300 bbls. daily of the heavy grades over an indefinite period at a premium of 10 cents over the market and Louisiana Oil Refining Corp. is paying a like premium for Louann light crude on a contract expiring in April. Daily average runs for the week were:

Louisiana	
Caddo, light	9,215
Caddo, heavy	2,895
Homer	4,150
Haynesville	5,800
DeSoto-Red River	4,010
Elm Grove	565
Bellevue	820
Cotton Valley, light	590
Cotton Valley, heavy	3,450
Urania	6,140
Pleasant Hill	550
Total	38,185
Arkansas	
El Dorado	5,200
Smackover, light	7,240
Smackover, heavy	54,725
Stephens	1,040
Nevada County	1,290
Lisbon	1,745
Champagnolle	11,940
Bradley	100
Total	83,280
Both states	121,465
Last week	121,810
Decrease	345

NORTH LOUISIANA

Bossier Parish

Elm Grove and Sligo—Arkansas Natural Gas Corp. has location 1,950 feet north and 380 feet east SW cor. SE Section 30-16-11 for No. 5 Horton-Prince. Barrett & Morgan are drilling at 1,186 feet on No. 1 Jones, Section 16-17-11.

Caddo Parish

Oil City—C. G. Gibbins' No. 1 Gibbins, Section 15-21-16, is shut down at 1,905 feet waiting orders. Magnolia Petroleum Co. is drilling hard sand at 3,006 feet on No. 3 Levee Board, Section 7-20-15. Shreveport Oil Corp.'s No. 1 Hutchinson, Section 32-21-15, is waiting on standard rig, total depth 2,221 feet.

Pine Island—Dixie Oil Co.'s No. 91 Dillon, Section 14-21-15, is waiting on standard rig, total depth 3,597 feet; No. 92 Dillon in Section 14-21-15 is drilling at 6,085 feet in shale. Magnolia Petroleum Co.'s No. 18 Robertshaw, Section 24-21-15 is in lime at 2,790 feet; No. 23 Robertshaw, Section 23-21-15 is shut down repairing the rig, total depth 2,380 feet.

Claiborne Parish

Haynesville—Smitherman & McDonald tested salt water at 3,150 feet and are drilling lime at 3,240 feet on No. 1 Miller, Section 17-23-8.

LaSalle Parish

Urania—Ayers Brothers have rig up for No. 6 Tremont in Section 30-10-2e. Randall and others' No. 1 Urania, Section 12-10-1e, made a small show of gas at 630 feet and is shut down for orders.

Monroe District

Morehouse Parish—Natural Gas Products Co.'s No. 1 fee, Section 9-20-4, is drilling at 750 feet. Southern Carbon Co. made location 1,280 feet north and 2,010 feet east SW cor. Section 15-22-4e, for No. 7 Tensas. United Carbon Co. set 12-inch surface casing at 195 feet on No. 1 Wright, 330 feet east and 660 feet north SW cor. SE Section 10-20-4.

Ouachita Parish—Arkansas Natural Gas Corp. has rig up for No. 1 Potts, 1,320 feet south and 620 feet west NE cor. Lot 1, Section 30-19-4. Jordan Drilling Co.'s No. 1 Cole, Section 1-18-3, is drilling at 1,875 feet. G. E. Jordan's No. 1 Wall, Section 12-18-3 is in the red beds at 3,128 feet. Magnolia Petroleum Co. has rig up for No. 3 Millsaps, Section 36-20-4. Moody & Seagraves set 6-inch casing at 2,140 feet on No. 1 Phillips, Section 20-19-4, tested 2,000,000 feet of

(Continued on Page 109)

OIL MEN TURNING ATTENTION TO SOUTHWESTERN ALABAMA ACREAGE

By D. H. Bancroft

SHREVEPORT, La., Nov. 5—Whether their activities are to be followed by drilling in the near future is not known, but for the last month a half dozen big companies and groups of individuals have been busy in southwestern Alabama assembling large blocks of acreage in Choctaw, Washington and Clark Counties until over 200,000 acres have been taken. Some of it has been under lease for five or six years, but there has been no drilling.

Carter Oil Co. has had a block of 70,000 acres since 1922 and W. R. Ramsey, of Tulsa, has had 10,000 acres for the same length of time. Recently Gulf Refining Co. sent lease men and abstractors to Jackson, 70 miles north of Mobile, in connection with leasing a 70,000-acre block. Pure Oil Co. has taken 10,000 acres and The Texas Company a like amount. John Greer, of Shreveport, has leased 25,000 acres. A group of steel men of Birmingham and the Alabama Light & Power Co. have a big block and are still buying.

Practically all the leases are the straight 10-year commercial leases and the blocks have been assembled for 50 cents per acre, 25 cents renewal. The Carter Oil Co. got its block for 10 cents per acre and 10 cents renewal, and Ramsey paid the same for his.

All the land is on the Hatchitigbee anticline, which has been known for several years and has been favorably reported on in a bulletin of the United States Geological Survey, now out of print. This structure extends for approximately 35 miles in a northwest-southeast direction through the three counties named and its geological column is much the same as that of the oil and gas producing country of North Louisiana and Arkansas with the different formations only a few feet at variance with their occurrence in this territory possibly a little deeper.

Some years ago, according to old newspaper files and landowners in the territory now so suddenly attractive, while the Government was building a dam and locks across the Tombigbee River where it cuts across this anticline an oil seep was opened in excavating or driving piling for this construction which released enough oil to cover the river, a navigable stream, for several miles. Somehow this oil caught fire and burned for several days, thus giving Alabama its first oil fire.

Too Much Oil Already in Sight

Why this showing was not followed by an immediate leasing and drilling campaign is explainable probably, only by the fact that the industry was too busy and there was too much oil in sight in the Texas coastal fields, Oklahoma and Kansas. But now that geophysical work in southern Mississippi and Alabama and the sporadic drilling in central and northwestern Mississippi has rediscovered the Hatchitigbee anticline it is probable that some one will go in and drill it. So far as known only one well has been drilled on it, that of the Empire Gas & Fuel Co., several years ago, which, though located on top of the structure and drilled to around 3,000 feet, resulted in a dry hole. There were several gas shows.

The Shreveport division got the first "kick" it has had in several weeks from the Panola County gas field when D. Thomason's No. 11 Crenshaw in the B. C. Jordan Survey blew in with an estimated 30,000,000 feet of gas, hoisted 17

(Continued on Page 114)

Muskegon Field Has 3,000-Bbl. Well

Three Other Big Producers Completed in This Area. Standard of Indiana to Build 80,000-Bbl. Storage Tank

By Special Correspondent

MUSKEGON, Mich., Nov. 3.—Daily production of the Muskegon oil field was more than doubled by the completion of a single well this week which made 3,000 bbls. from the Dundee formation at 2,064 feet for the first 24-hour test. The new producer which was drilled by C. L. Bullock, Ohio contractor, for the Muskegon Oil Corp., the Ottawa Oil Corp. and the Davis Oil Co. of Ohio. Although the well is located on a Muskegon Oil Corp. lease, each of the other companies owns one-fourth of the working interest in the well.

The well is located on a 40-acre piece of property owned by Albert and Otto Becker, NW SW Section 4-10-16, Muskegon Township. It has an estimated flow of about 2,000,000 feet a day of gas which is now lifting the oil after the first 24-hour test at the rate of about 100 bbls. an hour, or 2,400 bbls. a day.

As a result of the completion of this well and three other large producers in the Dundee formation, the Dixie Oil Co. is taking immediate steps to handle the greatly increased daily production. The gathering system of the company throughout the field has been doubled by the installation of 4-inch pipe lines in the place of the original 2-inch lines.

A. W. Peake, president of the Dixie Oil Co., who made a hurried visit to the field Tuesday following the completion of the first of the four big producers, announced that the Standard Oil Co. of Indiana, which had been purchasing the output of the field, will start the erection here immediately of an 80,000-bbl. storage tank. The new tank will be located on the Dixie Oil Co.'s storage tank farm, SW NW Section 8-10-16, on the property of Carl E. Myler adjacent to the Pere Marquette Railway tracks. The loading dock located on the opposite side of the railroad tracks will be lengthened 250 feet and extra siding may be installed to handle the increased production.

Total production of the field at the close of the first day of the run from the new record producer will exceed 5,000 bbls. It is expected to increase to about 8,000 bbls. a day as soon as the other three new producers in the Dundee formation are flowed open.

Three Other Good Wells

The largest of the other three Dundee oil wells is the McAfee-Refior's No. 1 Anderson, NE NW Section 9-10-16. It came in with an initial flow of about 8,000,000 feet of gas and an estimated initial flow of about 2,000 bbls. of oil from the Dundee formation at 2,054 feet. In two one-hour tests the well flowed 160 and 170 bbls., respectively.

Lack of field tanks and the inability to get any within a short time has made it impossible for this well to be completed although it came in five days ago. All of the available field tanks in Muskegon as well as Saginaw have been purchased or borrowed by operators bringing in new wells and the Muskegon Boiler Works, which has been making some tanks, is unable to keep up with the present demand. Practically all of the field tanks now in use have a capacity of but 100 bbls. each. Larger field tanks with a capacity of at least 250 bbls. each are now being ordered. The Muskegon Oil Corp. has ordered two 2,000-bbl. tanks for the new Becker well.

A new 3-inch pipe line and pumping unit is being installed for the McAfee-Refior well so that it will be opened and on the line within a short time.

The Dixie Oil Co. has had only two 1,500-bbl. storage tanks at its tank farm. It is now building a third tank which will have a capacity of 1,600 bbls. and will be located beside the two original tanks. These with the 80,000-bbl. storage tank to be erected by the Standard Oil Co. will provide tankage at the farm for 84,600 bbls. in addition to the many field tanks.

The Victor Oil & Gas Co.'s No. 1 Bensinger, NE SE Section 5-10-16, and the Paragon Oil Co.'s No. 1 Tripp, SE SE Section 5-10-16, are the two other new producers in the Dundee formation. Although neither has been flowed open for any length of time as yet, due to lack of field tanks and large enough lead-off lines, they are estimated to have from 10,000,000 to 15,000,000 cubic feet of gas flow each in addition to the oil. The Victor-Bensinger will make about a 1,000-bbl. initial producer and the Paragon-Tripp is expected to make about 400 bbls.

Three Other Completions

There were three other completions this week for a total of seven, threatening last week's record of nine new wells. One of the three was the Johnson Oil Refining Co.'s No. 2 Smith, SE SE Section 5-10-16, which came in at 2,065 feet in the Dundee formation as a 6,000,000-foot gasser. It is to be cased at this point and an attempt made to drill into the oil beneath a packer.

The other two completions this week were both small wells in the upper Traverse formation. The one was the Johnson Oil Refining Co.'s No. 2 L. Heinz, SW NE Section 9-10-16, and the other was the Lake Shore Petroleum Co.'s No. 1 Reeths, NE SE Section 8-10-16. The former was shot and the latter is to be tubed. Both are good for about 30 bbls. a day initial production.

Unexpected shows of gas and oil were encountered this week in two wells which have not yet been completed. One is the Joliet-Morris Development Co.'s No. 1 Kooi, SW NE Section 8-10-16, Muskegon Township, in which a flow of about 5,000,000 feet of gas a day was encountered in the lower Traverse formation at 1,938 feet. This is the greatest flow of gas struck anywhere in the lower Traverse.

The other surprise came when oil in some quantity was encountered at 801 feet in the Section Ten Oil & Gas Co.'s No. 1 McDermott, SW SW Section 10-10-16. The hole filled with oil about half way up and it was impossible to bail it below 200 feet. It will be placed on the pump to see what it will make. This is the depth at which a number of operators have found a show of oil in the red rock.

Good Gas Flow

Two wells are drilling into the Dundee formation today, one with a flow of about 7,000,000 feet of gas and the other just starting in. The one which had struck the gas was Kelley Goldboss' No. 3 Burns, SE SE Section 5-10-16, over which the State and the Chicago operator are contesting the right to drill on less than five acres. The gas was encountered at about 2,060 feet and the well was being drilled into the oil at 2,063 feet. The other well drilling into the Dundee is the Swastika Oil & Gas Co.'s No. 1 Gies, SE SE Section 6-10-16. This is the well which was abandoned by C. Wilbur White and the Natural Gas & Oil Co. as a dry hole in the Traverse formation.

The Dixie Oil Co.'s No. 1 Becker, SE SW Section 4-10-16, has been filled with mud and temporarily abandoned. This was the first well to be drilled into the Dundee oil sands and the operators have been working for months to make a successful completion of it.

Four wells are within a few feet of the Dundee formation and will probably be drilled in before the close of another week's operations. The Dixie Oil Co.'s No. 1-D Reeths, SW NW Section 9-10-16, has been cemented at 1,970 feet and will be drilled in next week. The other three and the depths at which they were drilling today are: Kelley Goldboss' No. 1 Birch, SE SE Section 7-10-16, 1,955 feet; Dixie Oil Co.'s No. 11-D Figge, NW NE Section 8-10-16, 2,000 feet, and the Muskegon-Ottawa-Davis companies' No. 1 Reeths, SW SW Section 4-10-16, mudding at 2,030 feet.

Two other wells are drilling between the upper Traverse and Dundee formations while four wells are nearing the pay sands in the upper Traverse formation. Seven wells have been spudded and are on their way to the lower Traverse formations.

Seven wells are being spudded. They are: Puritan Oil Co.'s No. 1 Burns, SE SE Section 5-10-16; Holland Oil & Gas Co.'s No. 1 Joslyn, NE SE Section 5-10-16; United Gas & Oil Co.'s No. 1 Cooper, NE SW Section 8-10-16; Muskegon Development Concord Oil & Gas Co.'s No. 1 Luinstra, NW NE Section 7-10-16; Concord Oil & Gas Co.'s No. 1 Giles, NE NW Section 6-10-16, and the Puritan Oil Co.'s No. 1 Nick Overkamp, SE SE Section 7-10-16.

Rigging 13 Tests

Rigs are being moved in and set up for the following 13 tests: Reed Oil Co.'s No. 1 Hill, NE SE Section 8-10-16; Reed Oil Co.'s No. 2 Torrent, SE SW Section 8-10-16; C. M. Bowers' No. 2 Hower, SE SE Section 5-10-16; Swastika Oil & Gas Co.'s No. 1 Berkema, SW NW Section 8-10-16; Lake Shore Petroleum Co.'s No. 2 A. Heinz, NW SE Section 8-10-16; Muskegon Oil Corp.'s No. 1 Daniloff; Dixie Oil Co.'s No. 2 Dirkes, NW NE Section 9-10-16; Dixie Oil Co.'s No. 2 Becker, SE SW Section 4-10-16; Johnson Oil Refining Co.'s No. 1 Van Allsburg, NE SE Section 5-10-16; A. S. Cochran's No. 2 Taggart, SE SE Section 5-10-16; Eagle Oil Corp.'s No. 1 Damm, NW NE Section 4-10-16, and L. H. Morehead's No. 1 Lakey, NW SW Section 1-10-16.

The last seven tests are to be drilled on locations not previously announced. Four other new locations have been announced as follows: Muskegon-Ottawa-Davis companies' No. 2 Becker, NW SW Section 4-10-16; Muskegon-Ottawa-Davis companies' No. 2 Reeths, SW SW Section 4-10-16; Joliet-Morris Development Co.'s No. 1 Daniloff, SW SE Section 5-10-16, and the Victor Oil & Gas Co.'s No. 1 Collins, NE SE Section 5-10-16.

The Lima Oil Corp. is moving in a rig for its No. 2 Haight, NE SE Section 9-10-16. There are 10 other announced locations on which no activity has been started.

Wildcat Tests

The past week has been rather unproductive among the Muskegon County wildcat tests. The S. B. Ridenour Syndicate's No. 1 Antisdale well, SE SE Section 2-9-16, Norton Township, was dry at the contract depth of 2,150 feet but

(Continued on Page 109)

REFUGIO LOOKS LIKE OIL FIELD; NEW POOL POSSIBLE IN LAREDO

By B. D. Stevenson

Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex. Nov. 5.—Important happenings developed in the three most important new fields in the San Antonio territory last week and a new pool is likely to be opened soon in the Laredo territory. In the Refugio gas field, which for the past few weeks has been trying to decide whether to turn into an oil field, Texas Gas Co. has pushed it over to the side of oil by bringing in its No. 2 Holmes Heard in the north end of the field in sand at 3,689 to 3,701 feet flowing initially about 750 bbls. of oil the first day through a half-inch choke and pinched to 500 bbls. on a quarter-inch choke and flowing to earthen storage. It was this same company that brought in the No. 1 Clint Heard in the south extremity of the field in the same 3,700-foot sand flowing considerable oil and sold the property to Benedum & Trees.

The new well is about 3½ miles in a straight line north and a little east of the first well. On the map of the Refugio Field published in The Oil and Gas Journal, October 11, this new well is not shown. It is in the center of the 40-acre block next west of the 40-acre block in which the Larson-Walsh No. 1 Holmes Heard, a big gas well at 3,652 feet.

Texas Gas Co. drilled the Larson-Walsh well as its No. 1 Holmes Heard and sold it along with the No. 1 Strauch southeast of it to Larson-Walsh. Then the company went to the south end of the field and brought in its No. 1 Clint Heard, an oil well and sold it to Benedum & Trees. It was the first to find the new 3,700-foot sand. Now it has gone back to the north end and brought in an oil well. The new well was carried in The Oil and Gas Journal as No. 1 Holmes Heard, but really should be called No. 2 since the company drilled also the well now owned by Larson-Walsh and on Holmes Heard land.

Since the map was published in The Oil and Gas Journal October 11, Sun Oil Co. has brought in its No. 1 Buckley next south of the Strauch well and next east of the Vance well of Houston Gulf Gas Co. at 3,657 feet, a gas well with 1,325 pounds rock pressure. Surface elevation of these wells is practically the same and it would look therefore as though the three gas wells in the north end of the field if deepened a little would get oil.

Smith Gets Important Well

Another important happening in the Refugio Field is George E. Smith's No. 1 Rose Rogers, getting gas at 3,700 feet. In the map in The Oil and Gas Journal, referred to this is shown as a dry hole at 2,510 feet to which depth it was drilled by William F. Morgan and is shown in the west side of the field where Blanco Creek makes a sharp bend to the east. It got 45 feet of sand at 3,650-95 feet and was still in the sand. It makes a dry gas with 1,450 pounds rock pressure. The volume was not gauged. It is the first 3,700-foot test other than the five wells in the north end of the field and three in the south end, and this well being off to the side from the center of the field is of great importance. It is approximately a mile northwest of a line drawn from the 3,700-foot wells at the northeast end of the field and those at the southwest end.

As the week closed in the Refugio Field Houston Oil Co. has the casing hung up in its well on the Wilson Heard, the

(Continued on Page 110)

New Shallow Sand at South Liberty

"Cavity" Well Brought in Flowing 1,250 Bbls. Is Flowing 1,550 Bbls. and Opens New Field for Development

By Neil Williams
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., Nov. 5.—Gulf Coast salt dome geology received one of its biggest surprises in months the past week when a "cavity" well being drilled on top of the South Liberty Dome by the Sun Oil Co. found a shallow sand and was brought in flowing 1,250 bbls. of pipe line oil daily through a half-inch choke. Not only holding up to its initial production, but showing a steady increase, flowing at the rate of 1,550 bbls. Saturday, the well opens an entirely new field for development in a shallow sand on top of the dome instead of on the flank where the previous production has been at South Liberty.

The well, Sun Oil Co.'s No. 10 Mitchell, was drilled solely for a cavity hole into which salt water from other wells on the lease was to have been pumped for disposal, and its location was well up on the dome in order to hit the salt and no sands were expected. In going down with the hole, however, the shallow sand was encountered at 875 feet and tested.

The sand is the shallowest producing at South Liberty. The main production, which is on the flank on the east side of the dome, comes from sands ranging from 3,100 to 3,450 feet. The next shallowest sand was found in a well completed several weeks ago, the latter being Liberty Petroleum Co.'s No. 1 Turner, a a wildcat approximately 1,500 feet north of the "cavity" producer. Its total depth is 1,621 feet. It at present is flowing between 70 and 75 bbls. of oil, although it blew wild for a time and flowed at the rate of an estimated 1,000 bbls. for a while.

The two wells are not to be compared as having any connection, as the Turner well's production is oil of high gravity (41.6 degrees), and the South Liberty well's oil is 26 gravity of normal Gulf Coast crude. Shallow high gravity oil on the Gulf Coast usually is freakish.

Extensive Possibilities

Shallow sand development on top of the dome offers extensive possibilities for new production, as has been the case at Spindletop, Humble, Jennings and several other such domes. Already offsets to the Sun well have been started. The well is in the southwest corner of the Sun's Mitchell tract with Gulf Production Co.'s Chambers tract to the west and The Texas Company's Staiti lease on the south. Gulf's No. 1 Chambers is 110 feet west and The Texas Company's No. 13 Staiti, 110 feet south. Sun also has made location there for No. 11 Mitchell.

This new play is approximately 1,000 feet west of the center of the flank production being developed by the Sun and the Yount Lee Oil Co. just north of the main South Liberty Field, that production being in the SE cor. of the same Mitchell tract and in Yount Lee's Mitchell acreage offsetting the Sun tract on the east.

Blowout in Fort Bend

A blowout in a shallow cap rock test at Long Point, Fort Bend County, a new dome yet to develop its first commercial oil, was another interesting development the latter part of the week. The well, Gulf Production Co.'s No. 12 Wolf, blew out while at a total depth of 601 feet in cap rock topped at 591 feet and showed a little oil with the gas which tested 225 pounds rock pressure. The dome, which is about midway between the Big Creek and Nash Domes, is being prospected consistently by the Gulf Production Co., which has been keeping two rigs active.

Earlier in the week, Union Sulphur Co. completed the record deep well at its Sulphur Dome, Calcasieu Parish, when its No. 730 feet came in flowing 1,200 bbls. of pipe line oil testing 21.8 gravity, corrected, from a sand at 5,705 feet. Other wells have been higher on the dome, with the depth of the sands from 3,000 to 4,000 feet.

With the exception of another good producer at the new DeWalt Dome of Fort Bend County brought in early in the week, there were no other completions of any particular significance in coastal territory. At DeWalt, Humble Oil & Refining Co.'s No. 2 Sugarland, deepened to 3,671 feet, came in flowing 960 bbls.

Blue Ridge Producers

Blue Ridge added three producers, two of which were old wells worked over or deepened. Gulf Production Co.'s No. 15 Blakely came in Friday flowing 800 bbls. of oil from sandy shale at 3,958 feet. The latter company's No. 12 Luscher, a former well, flowed 400 bbls., 2 per cent water, from sand at 3,624 feet. It originally produced from a sand at approximately this same depth, but was deepened to below 4,300 feet and then plugged back. South Texas Petroleum Co.'s No. 1 Gabe Lee was deepened to 4,027 feet, making 800 bbls. of oil.

Gulf Production Co.'s No. 1 Spencer at High Island came in flowing 325 bbls. at 3,099 feet but sanded up. It has been cleaned out and is being rigged up to pump. Others were Rycade Oil Corp.'s No. 13 Wisdom, Nash, deepened to 3,822 feet, flowing 50 bbls. through tubing; Yount Lee Oil Co.'s No. 33 McFaddin, Spindletop, a work-over flowing 1,000 bbls. at 4,173 feet; same company's No. 31 McFaddin, Spindletop, a work-over, 100 bbls. at 5,116 feet; same company's No. 3 Davis, old well deepened, 800 bbls. net oil, at 3,674 feet, and its No. 9 Gladys City, a work-over, 500 bbls. at 2,650 feet.

Lakeview Oil Co.'s No. 57 Hardin, Sour Lake, is pumping 9 bbls. net oil at 988 feet; Humble Oil & Refining Co.'s No. 3 Jones, Goose Creek, a work-over, was put on the pump for 25 bbls. at 2,529 feet. Sun Oil Co.'s No. 1 Belile, Orange, deepened to 3,665 feet, is pumping 7 bbls. net. Vinton Petroleum Co.'s No. 8 Rescue, Vinton, was put on the pump at 2,836 feet for 10 bbls. net. Seiss Oil Syndicate's No. 6 Green, Vinton, pumped 20 bbls. net at 2,489 feet, and Marrs McLean's No. 1 G.&N.G., same field, a work-over, was put on the pump at 1,787 feet for 230 bbls. fluid, 97 per cent oil. Rex Petroleum Co.'s No. 3 Hunter, Edgerly, is pumping 2 bbls. net oil at 3,965 feet.

Abandonments during the week included Gulf Refining Co.'s No. 10 United Land Co., Sorrento Dome, Ascension Parish, which will be used as a cavity well for salt water. Roxana Petroleum Corp. abandoned 4 wildcats; No. 2-A Pool, Allen Dome, dry at 5,958 feet; No. 2 Wilbert, White Castle, salt water in cap rock at 4,218 feet; and Nos. 3 and 4 Watkins, Black Bayou, Cameron Parish, the former dry in cap rock at 1,394 feet, and the latter dry at 2,494 feet. Sun Oil Co. quit its No. 1 Kyle, Moss Bluff Dome, Liberty County, at 2,980 feet, and Moody Corp. its No. 1 Jamison, a wildcat in Brazoria County, dry at 4,742 feet. Gulf Refining Co.'s No. 6-Z State, Loreauville, Iberia Parish, drilled into a cavity at 1,347 feet, and was abandoned.

Daily Average Production

Production increases at Blue Ridge, South Liberty, DeWalt and Boling were largely responsible for an increase in the daily average output of Gulf Coast fields the past week from 133,787 bbls. to 136,285 bbls. By fields the production was:

GULF COAST

Texas	
Allen Dome	7
Barbers Hill	2,800
Batson	1,368
Big Creek	2,096
Blue Ridge	7,852
Brenham	158
Boling	1,895
Damon Mound	675
DeWalt	2,900
Fannette	30
Goose Creek	6,687
High Island	519
Hull	12,165
Humble	3,047
Markham	325
Nash Dome	950
North Dayton	660
Orange	3,780
Orchard	122
Pierce Junction	11,286
Raccoon Bend	555
Saratoga	1,000
Sour Lake	3,148
So. Liberty and So. Dayton	4,264
Spindletop	39,773
West Columbia	7,527
Total this week	115,589
South Louisiana	
Anse LaButte	60
Atchafalaya	700
East Hackberry	3,365
Edgerly	875
Evangeline	948
Lockport	3,585
Loreauville	7
Sorrento	658
Starks	660
Sulphur	3,500
Sweet Lake	2,000
Vinton	4,308
Welsh	30
Total this week	20,696
Total last week	20,153
Increase	543
Total Gulf Coast	136,285
Total last week	133,787
Increase	2,498
Southwest Texas	
Dale	750
Kingsville	277
Luling	14,440
Lytton Springs	1,202
Somerset	1,989
Miscellaneous	10,130
Total this week	28,788
Total last week	29,020
Decrease	232

Barbers Hill Activity

Since the completion several weeks ago of a 4,000-bbl. producer by Bennett Petroleum Co., a well which has held up to around 2,400 bbls., an exceptional record, a drilling boom has got under way at Barbers Hill, Chambers County, with five new rigs already running, another ready to start up, a derrick going up for another and location made for a ninth.

Bennett Petroleum Co.'s No. 2 Kirby, is drilling gumbo at 1,200 feet. Humphreys Corp.'s No. 1 Higgins is drilling through a shallow sand showing some oil at 570 feet. This company's No. 1-C Kirby is in gumbo at 600 feet and No. 3-A Barber is in gumbo at 1,231 feet. Bennett Petroleum Co. also has made location for its second Smith well in the SE cor. of tract on which it got its big producer several weeks ago. Joe Bashara also has made location for a test on its No. 6 tract 180 feet west of the Bennett Smith producer. On the southwest side of the dome, Yount Lee Oil Co. has started drilling in its No. 1 Chambers County and is ready to spud in on its No. 1 Richardson.

Boling—Wharton and Fort Bend

Gulf Production Co.'s No. 2 E. C. Farmer, southeast flank, is drilling gumbo and lime at 2,944 feet. Heep & Hawn's No. 1 River Bed on the east

(Continued on Page 114)

BASTROP COUNTY SERPENTINE SHOW IS MOST LIKELY LOOKING WILDCAT

By B. D. Stevenson

SAN ANTONIO, Tex., Nov. 5.—Cranfill & Reynolds' No. 1 Yost in Bastrop County has set casing to test a showing of oil in serpentine, and the industry is getting ready for a new Serpentine Pool. The well is approximately in the center of the A. Yost 400-acre farm in A. Garcia Survey, a little over 2 miles southwest of Cedar Creek in the southwestern part of the county, and the showing of oil was had at around 1,500 feet. It is said to be a pretty good showing of oil, and is the most likely looking wildcat in the San Antonio district at this time. The test will be made probably by the middle of the week.

Fayette County

Another wildcat being watched is the R. E. Phalon No. 1 Cervenka in Fayette County that is down now below 2,500 feet but which got a whiff of poison gas at 2,461-68 feet which may indicate it is on a structure and favorable. The gas was thought to be at the contact of the Yegua and Cook Mountain, and if so the Cook Mountain is running a little high. It is one of the first and so far as can be remembered probably the only instance of poison gas being found in this territory.

Zavala County

Col. Ike Taylor is drilling the No. 1 fee in Zavala County and will seek to develop a gas area in the northern part of the county on his land. No. 1 fee is near the old National well drilled some years ago that got a big volume of gas at a comparatively shallow depth which was plugged and abandoned because at that time there was no market for the gas. Now there is a market with pipe line project financed to supply six counties in that part of the State. At 1,190 feet No. 1 fee got considerable gas but not enough for a well and is deepening.

Bee County Play

There is something of a scramble on for leases in Bee County. The Hurador Oil Co.'s No. 1 Ray, northeast of Pettus, has set casing and run tubing with a total depth of about 3,250 feet and there is a chance that it might make a well. Information from the well is quite meager, scouts being shooed away from the location, but enough is known to indicate there was something of a showing of oil, and it is a possible producer.

Calhoun County

A wildcat worth watching is B. F. Thompson's No. 1 Thomas being drilled in Calhoun County southwest from Port Lavaca and now down around 1,700 feet. It is on an extension of one of the anticlines that run through the Corpus Christi territory, and all that part of the country is now being actively worked over by operators on account of the new gas pool at Agua Dulce in western Nueces and the oil production in the Refugio Field in Refugio County. It is pretty much virgin territory and nothing but surface geology to go by. Thompson's well is meeting all expectations thus far, though not deep enough to get what they are looking for. Leases are being blocked east ond north of this location.

Laredo Territory

O. W. Killam's No. M-1 Bruni, near the center of the west line of Block 11 of the Bruni subdivision of the Albercas grant in Webb County, just a little east of the Bruni extension of the Aviator Pool, on a drill stem test showed oil at 1,863 feet. Four dry holes in a line a half mile west of it and along the east

(Continued on Page 117)

Big Producer Completed at Salt Creek

Sundance Sand Well Flows 5,000 Bbls. in 30 Hours. New Mexico Tests Show Promise. Plan Oregon Basin Restriction

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Nov. 3.—The completion of a Sundance sand well on the Mountain Producers Corp.'s lease in Salt Creek which flowed 5,000 bbls. in 30 hours before being shut in was one of the outstanding features of the week in the Rocky Mountain area. In New Mexico the Marland Production Co. has a 15,000,000-foot flow of gas in its No. 1 Lynn, in Lea County, and several other wells in that area are showing encouraging results. The Gypsy Oil Co.'s No. 1 Ramsey is making 30,000,000 feet of gas and the Marland's No. 1 Brooks is showing a little oil.

The coal industry in Utah is making a strenuous fight against the proposed gas line to that state from Wyoming and the Public Utilities commission has not yet decided whether a permit will be granted.

The Texas Corporation will double the capacity of its refinery at Craig, Colo., beginning the first of next year. The Standard Oil Co. of California, it is reported, may invade the Rocky Mountain area with a retail marketing unit.

Only one completion was reported in Colorado, this being a dry hole in Fremont County. Two important locations in northwestern Colorado, one on the Moffat Dome, and the other in the fault area south of Iles, were announced.

Efforts of operators in the Oregon Basin Field in Wyoming to reach an agreement for limiting drilling and prorating runs are making progress and as a result not more than six or seven wells will be drilled this winter. Salt Creek drilling is proceeding on a small scale at present and next year's program is outlined for deepening Lakota shale wells and drilling Lakota wells to the Sundance.

New Mexico

One of the more important developments of the week in southeastern New Mexico was in the Marland Production Co.'s No. 1 Lynn, NW cor. SE, Section 26-23-36, in the Ochoa district in Lea County, 17 miles north of the same company's No. 1 Eaves, the big gas well. It is bottomed in white lime at 3,135 feet and coring. It has been showing a little oil and at 3,091 feet it ran into sulphur gas, the flow being estimated at 15,000,000 feet a day. It is running high and looks very encouraging. The same company's No. 1 Brooks, NW cor. SW, Section 8-20-33, about 15 miles to the northwest of the Lynn well, also is showing up favorably. It is drilling at 3,135 feet in lime and had shows of oil and sulphur gas at 3,025-30 feet and also shows of oil at 3,080-90 and 3,125-35 feet. It topped the lime at 2,865 feet. Marland's No. 1 Eaves, SW NE, Section 19-26-37, had not made any new hole for the past three months since it encountered a flow of gas at 2,968 feet which tested 90,240,000 feet. The gas was killed and the hole drilled to 3,000 feet when a fishing job developed. A rotary derrick is being built over the hole and an effort made to sidetrack the tools.

Marland's No. 1 Sholes, NW cor. SW, Section 19-25-37, 6 miles north of the Eaves well, which has been tied up with a fishing job at 3,030 feet for some time after running into a flow of 50,000,000 feet of gas, is having better luck in pulling the casing and now has nine joints out. Same company's No. 1 Warren, SW SW, Section 28-20-38, commenced spudding October 26 and is bottomed at 105 feet, and its No. 1 Reed, NE cor. SW, Section 22-20-26, in the San Simon district, is spudding at 90 feet. The same company's No. 1 Lockhart, NW NW, Section 31-21-36, in the Eunice district, is drilling at 755 feet in the red beds, and its No. 1 Slattery, SW cor. NE, Section 7-22-35, in the same area, is drilling at 1,615 feet in lime. Marland's No. 1 Danciger, SW cor., Section 7-23-36, is drilling at 3,390 feet in salt, and its No. 1 King, NE cor., Section 26-25-32, is drilling at 4,037 feet in salt. Same company's No. 1 Meyer, SW cor. NW, Section 26-20-37, is drilling at 705 feet in the red beds. The Empire Gas & Fuel Co. has its rig up for its No. 1-C State, SW cor., Section 12-21-34. The Texas Production Co.'s No. 1 Cagle, NE SW, Section 9-26-37, is setting up rotary to replace one destroyed by fire when it ran into a gas pocket at 2,857 feet. The flow of gas was estimated at 10,000,000 feet. The Gypsy Oil Co.'s No. 1 Ramsey, SW cor., Section 34-21-36, in the Eunice district, is drilling below 3,352 feet and making 30,000,000 feet of gas. This is a larger flow than was found at 3,230-90 feet and which was mudded off. The Midwest Refining Co.'s No. 19 Farnsworth, SW SW, Section 12-26-37, is drilling at 3,749 feet in lime and is not showing any more oil. The Skelly Oil Co.'s No. 1 Joyner, NE cor. SE, Section 26-25-36, is drilling at 3,085 feet in dark gray lime and had another show of gas at 3,036-40 feet. The Maljamar Oil & Gas Co.'s No. 2 Pearsall, NE NE, Section 33-17-32, in the Maljamar area, is running 15½-inch casing at 725 feet. The C. E. Reynolds Drilling Co.'s No. 1 Anderson, in C SE, Section 29-13-37, on the Tatum high, is drilling below 5,000 feet in lime and getting rather deep. The Texas Production Co.'s No. 1 Moberly, SW SE, Section 17-26-37, is drilling at 2,879 feet and topped the brown dolomite at 2,773 feet, and the same company's No. 1 Shepherd, SE cor. NE, Section 6-26-37, is bottomed at 2,895 feet where it is tied up with a fishing job. A hollow reamer is being run to drill by the tools. Hill & Abel's No. 1 Maechtel, SW cor., Section 5-26-33, commenced spudding October 24.

In Other Sections

In De Baca County, the Matador Oil Co.'s No. 1 Wood, NE SW SW, Section 6-4n-20, on the Salada Creek structure, is drilling at 570 feet. The top of the Magdalena limestone is expected in this test at 2,100 feet. The Transcontinental Oil Co. is moving in for its No. 1 McWhorter, SE SW NW, Section 6-3s-22, on the La Mora structure. The elevation of the derrick floor is 4,500 feet.

In Chaves County, Snowden & McSweeney's No. 1 Merchant, NW NW, Section 27-15-23, on the Coontail structure, is drilling at 3,460 feet.

In Eddy County, Flynn, Welch & Yates' No. 1 Jackson, C NE, Section 13-17-30, is drilling below 3,340 feet in anhydrite and shale, and Leonard & Levers' No. 1 Haggerty, NE cor. NW, Section 18-16-30, is delayed by frozen pipe at 2,070 feet.

In the northwestern part of the State, the Dorothy Oil Co. has been formed to take over the Huntington Park Oil Co.'s operation in the Blanco district in San Juan County. H. N. Longfellow is president. The company has a gas well in Section 29-30-9, and is putting into operation a gasoline plant. Mr. Longfellow estimates that this plant when in full operation, will produce about 800 gallons of 67 gravity gasoline per day from this well. Arrangements also are being made for the operating of a brick plant with the residue gas for fuel. The company's No. 2 Goede, NW SE, Section 29-30-9, is setting the 15½-inch casing at 80 feet. The Angel Peak Oil Co.'s No. 1 Garland, Section 11-28-11, in the Kutz Canon district, is drilling after setting the 10-inch casing at 620 feet, and the Iowa Oil Syndicate's No. 1 Viles, SE cor., Section 28-29-11, in the same district, has lowered casing to the top of the oil sand at 663 feet and made a water shut-off. The well looks as if it will be good for 10 bbls., and if it comes up to expectation, it will be put on production from that horizon, a sand in the top of the Farmington formation.

Utah

The Utah Public Utilities Commission still has under consideration the application of John McFadyen, vice president of the Ohio Oil Co., and L. B. Denning, of the Lone Star Gas Co., for a certificate of convenience and necessity for the construction of the proposed pipe line from southwestern Wyoming and northwestern Colorado into central Utah. Opposition to the granting of a permit has developed in several quarters, principally where coal mining is an important industry and where natural gas will come into competition with coal. The fight is very similar to that made in Colorado when the Amarillo-Denver line was projected, but now that this line is built and in operation it does not appear to have had the disastrous effect on the coal industry which the protestants claimed would result.

Drilling operations in Utah resulted in no important developments during the week. The Continental Oil Co.'s Boundary Butte test in Section 23-43-22, in San Juan County, is making better progress after cleaning up a long and tedious fishing job and is drilling at 4,250 feet in the Pennsylvanian formation.

The Utah Southern Oil Co. and Moab Consolidated Oil Co.'s No. 1-A J. L. Shafer, Section 36-26-20, on the Cane Creek Dome in Grand County, set the 8¼-inch at 2,088 feet on a hard shell, where it was mudded. Water was bailed out and a test made. Drilling is in progress at 2,121 feet in shale and lime. Same companies' No. 1 King, Section 13-23-20, on the Salt Valley structure, is running the 10-inch to set at 1,642 feet in lime. The total depth is 1,650 feet with a small quantity of salt in the lime at the bottom. At 1,480 feet, water showing salt saturation and carrying a little cut oil, was encountered. The Utah Southern Oil Co.'s No. 1 Farnsworth, Section 29-4s-1e, on the Pleasant Valley structure in Uinta County, is running the 15½-inch at 327 feet in hard gray shale. No water has been encountered so far. The Ashley Valley Oil Co.'s No. 1, Section 22-5s-22, in Uinta County, is bottomed at 1,500 feet in the Morrison and underreaming the 8¼-inch.

Colorado

Only one completion was reported in Colorado this week, this being the Continental Oil Co.'s No. 1 Hunden, SW SW, Section 2-19-70, in the Canon City district in Fremont County. It failed to strike the shale pay and was abandoned at 3,123 feet.

A new location which will result in an important test has been made in Moffat County, in the Shaffer Oil & Refining Co.'s No. 1 Williams, SW NW SW, Section 2-3n-92. This is to be a joint well, the Morapos Oil Corp., a subsidiary of the Yarg Producing & Re-

(Continued on Page 77)

SPOONER WELL IN TURNER VALLEY EXPECTED TO MAKE 75 BBLS. DAILY

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Nov. 3.—In the Turner Valley Field, Spooner Oils' No. 1, LSD 12, Section 13-20-3w5, is down 5,265 feet and testing production. With 300 pounds back pressure on the well and 150 pounds on the separator it has been making 60 bbls. a day, and is expected to produce 75 bbls. or better under normal conditions. The diamond drill outfit has been transferred to Vulcan Oils' No. 1, LSD 11, same section, which is being cleaned out and deepened from 5,004 feet. Vulcan's No. 1 has been frozen some time, but has a normal production of around 107 bbls. Spooner Oils' No. 2, Section 24-20-3w5, is drilling 30 feet in a lime formation at 4,700 feet depth, but it is not certain whether this is the deep lime.

Okalta Oils' No. 1, LSD 1, Section 1-20-3w5, is reported drilling around 5,000 feet, or 85 feet in the deep lime, with considerable wet gas and about 40 bbls. a day production. The test is about 90 feet from the big producing horizon in the Madison, and the wet gas shows a heavy naphtha saturation. A large diamond drill outfit is being used to complete the well. Okalta's No. 2, LSD 8, same section, is pumping between 15 and 20 bbls. a day from the Kootenay sands at 3,000 feet; but as soon as No. 1 is completed, No. 2 will be deepened to the lime. Okalta's No. 3, LSD 9, same section, is drilling a 15½-inch hole at 1,750 feet. This test is about 400 yards due south of McLeod's No. 4, which got a big wet gas production in the lime and is making around 100 bbls. a day of crude naphtha.

Directors of Okalta Oils, Ltd., held a meeting recently when they subscribed for a stock issue of $30,000 to finance completion of the present operations. W. S. Herron, vice president of the company, was appointed managing director.

Close to the Lime

McLeod Oil Co.'s No. 3, LSD 16, Section 1-20-3w5, is reported drilling close to the lime at 4,750 feet. McLeod's No. 4, same LSD, is increasing its crude naphtha production, originally reported at somewhat better than 100 bbls. a day.

New McDougall-Segur Oil Co.'s No. 2, LSD 14, Section 12-20-3w5, is drilling at 3,977 feet, and apparently in the Home sand, though traces of lime have been met. Casing is being carried down right behind the tools. Illinois-Alberta Oils' No. 2, same LSD, has resumed drilling at 3,331 feet, after a gas blowout which shot the mud over the derrick, bridged the hole and necessitated some repairs. Illinois-Alberta's No. 1, same LSD, is maintaining a steady crude naphtha production of 90 bbls. a day. Calmont Oils, LSD 2, Section 1-20-3w5, has suspended drilling past the lost tools and started fishing for the string, which is lodged near the bottom of the 5,600-foot hole.

Royalite Operations

Royalite Oil Co.'s No. 19, LSD 5, Section 6-20-2w5, is drilling at 2,556 feet in the upper Dakota, after encountering a fair show of oil in the grit beds some 250 feet above the McDougall-Segur sand.

(Continued on Page 109)

California Entering Major Upswing

Daily Output May Exceed 800,000 Bbls. Owing to Deep Drilling in Santa Fe Springs. Long Beach Fools Forecasters

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., Nov. 5.—California is about to enter another major upward swing in production owing to deep-zone exploitation at Santa Fe Springs, and if the lower virgin sands run true to form, daily production should exceed the 800,000-bbl. mark before the peak has been reached early next year, provided, however, that production is not prorated or curtailed too severely. The deep Buckbee zone at Santa Fe Springs has already begun to manifest itself in State production and, with 25 new wells scheduled for completion in this field during November and about 25 more in December, it is quite possible that deep-zone production will exceed 100,000 bbls. a day before the new year rolls around. Long Beach has fooled prognosticators and instead of passing out of the picture as some predicted this field will continue to be an important factor in the State production, although the trend, of course, will be downward. There are about 10 wells nearing completion in the deep sand at Santa Fe Springs and if this group is finished according to schedule most of the wells should be tanking oil within the next 15 days.

There are still 194 wells drilling for the deep sand at Long Beach and they will be augmented by at least 100 more if the Los Cerritos area is ultimately found to yield substantial production. Some are inclined to discredit the possibility of securing large production in this northwest extension where the two upper horizons failed to sustain intensive drilling, but personally I believe that Los Cerritos will eventually prove an important factor, although it will require deeper drilling than was necessary in the older area. It certainly should not be entirely discredited, especially in view of the fact that a satisfactory conclusive deep test has not yet been drilled in that section. Several wells are now under way, however, in the heart of the Los Cerritos area and something tangible should be determined within the next 30 days.

Theory May Be Wrong

The generally accepted theory that the Los Cerritos section is cut off from the old productive area at Long Beach by a cross fault or saddle is open to criticism and may ultimately be proven erroneous. New wells recently have been completed in the western end of Long Beach in territory which a few months ago was considered extremely doubtful. It is a fact nevertheless that the outer limits of deep production have been consistently extended westward with the result that substantial production is now being secured on two sides of the Los Cerritos town lot area. The intensive deep-zone exploitation campaign under way at Santa Fe Springs has temporarily forced Long Beach into the background, but if one of the several deep tests now being drilled at Los Cerritos should get big production the latter area will again become the mecca of successful operators.

Santa Fe Springs is rapidly nearing the critical stage and deep wells should be finished in increasing numbers beginning probably early next week. York & Lockhart's No. 1 McKeon, now standing cemented at 5,615 feet with the bottom of the hole at 5,705 feet, should be the next completion listed in this field, although there are several others due in almost simultaneously with the completion of this project. The exact status of the deep zone at Santa Fe Springs is somewhat in doubt at the present time due to competitive drilling which is working to the detriment of the field in general.

Instead of coring solid after leaving the Meyer zone in order to determine existing subsurface conditions some operators are drilling ahead blindly with the result that oil sands of considerable economic importance have been passed up on several occasions. No one seems willing to undertake this much-needed pioneering by coring a few wells solid and it is quite possible that many projects will inadvertently shut off the top of the deep zone.

Number of Zones in Doubt

Doubt exists as to whether one or two zones exist below the Meyer. The logs of three drilling projects indicate two distinct zones separated by an intermediate water sand, while another project indicates the presence of only one oil sand existing practically uninterrupted from 4,850 feet to almost 6,000 feet, a thickness of approximately 1,150 feet. The only plausible explanation of these two divergent conditions is that the oil zone on the apex of the structure is solid, whereas sands further removed from the crest are separated into two component parts by fingers of barren sand.

The competitive drilling campaign, which was initiated at Santa Fe Springs as soon as deep-zone exploitation got under way, has also been responsible for the lack of uniformity in well logs. In their haste to participate in the initial flush production from the lower zone several operators drilled too fast with the result that extreme deviations from the vertical have been recorded in several projects. In one instance a well was carried down to 6,080 feet without picking up the lower zone which should have been encountered around the 5,000-foot level. This well, incidentally, was located very favorably with respect to structure and it was quite obvious that a deviation from the perpendicular had taken place as two wells further out on the structure had previously secured production. Another well of the same company also failed to encounter the top of the Buckbee zone, notwithstanding the fact that drilling in this instance was concluded at 5,898 feet, over 800 feet deeper than the depth at which production was anticipated. Both wells were surveyed subsequently and were forced to plug back and begin drilling new holes just below the 2,000-foot level in order to correct the deviation which had taken place.

Flush Production to Keep Them Busy

With Santa Fe Springs scheduled to register substantial production early next year and a possibility of Long Beach holding up indefinitely, it is quite obvious that California operators will have their hands full taking care of flush production at least during the next six months. The local situation would not be unduly embarrassing, however, if it were not for the production of heavy unrefinable crude, stocks of which have been accumulating for several months.

Engineers have estimated that the potential peak at Santa Fe Springs may exceed 300,000 bbls. per day early next year, although it is extremely doubtful if actual production will be permitted to exceed 200,000 bbls. daily. The limited market for fuel oil will naturally result in the addition to stocks of several million barrels of refinery residuum which will accrue from the refining of the sweet crude expected to result from deep-sand exploitation at Santa Fe Springs.

A constructive program covering repressuring operations and storage of surplus gas in the Meyer zone at Santa Fe Springs has already been worked out and, while producers are considering the advisability of prorating or curtailing crude oil production in this field, it remains to be seen how effective the projected proration program will become.

The smaller operators are not entirely in sympathy with the proposal to arbitrarily reduce deep-zone production at Santa Fe Springs, several of them taking the position that production of heavy unrefinable crude in other areas should be curtailed in lieu of any proration at Santa Fe Springs where a highly desirable refining crude is secured.

The resumption of production activities by producers of heavy unrefinable crude on the west front area of the Kern River Field on October 20 has precipitated a rather unusual situation. The major pipe line companies are under contract to accept this heavy oil though all of them would like to be relieved of this responsibility. The Standard's reduction of 25 cents per barrel in the price of heavy unrefinable crude made simultaneously with the resumption of production in this area has put producers in a rather ambiguous position.

Mixed Conditions Prevail

Property owners are demanding that operators resume production, notwithstanding the fact that some of them are unable to operate at a profit. Production activities along the west front of the Kern River Field are therefore in a rath-

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, well and location—	S-T-R	Depth	Status
Ring Pet. Co., No. 1 Ingelwood, Los Angeles Co.	28-20-14	4,352	suspended
Mont. Park Oil Co., No. 1 Browning, Monterey Park	26- 1-12	4,420	suspended
Mont. Park Pet. Co., No. 1 Jepson, Monterey Park	25- 1-12	3,030	sd. sh. drilling
World Pet. Corp., No. 1 Bell, Los Angeles Co.	22- 3-12	2,915	suspended
Associated, No. 1 Taylor, Los Angeles Co.	33- 2-12	4,606	sd. sh. drilling
Empire Drlg. Co., No. 1 Bell, Los Angeles Co.	14- 2-12	4,501	gr. sd. drilling
Continental Oil Co., No. 1 La Mirada, Los Angeles Co.	10- 3-11	3,618	hd. sd. drilling
Shell, No. 2 Mission, San Fernando	4- 2-15	4,903	gr. sd. drilling
Andrews, Otis, No. 1 Lancaster, Los Angeles Co.	23- 8-13	2,080	suspended
Security Pet. Co., No. 1 Lynwood, Los Angeles Co.	13- 3-13	5,333	suspended
Richfield, No. 1 Mayyood, Los Angeles Co.	13- 2-13	Rig	rigging up
Harding, J. B., No. 1 Watts, Los Angeles Co.	17- 3-13	579	water trouble
Easton & Smith, No. 1 Calabasas, Los Angeles Co.	19- 1-17	2,982	suspended
Russell Oil Co., No. 2 Joughin, Los Angeles Co.	25- 3-17	1,008	suspended
Mallory, Ellis, No. 1 Manhattan, Los Angeles Co.	30- 3-14	125	suspended
Pomona Oil Co., Well No. 1, Los Angeles Co.	32- 1- 8	1,075	clean. out
Anchor Oil Co., No. 1 Puente, Los Angeles Co.	19- 2-19	4,748	plug. bock
Richfield Oil Co., No. 1 Puente, Los Angeles Co.	9- 2-10	2,311	sd. sh. drilling
Calif. Eastern, No. 1 Wickham, Los Angeles Co.	32- 5-17	979	hd. sd. drilling
The Texas Company, No. 1 Anaheim, Orange Co.	35- 4-10	Mtl.	building rig
Bastanchury Ranch Co., Well No. 1, Orange Co.	21- 3-10	Rig	rigging up
Mesa Pet., No. 1 Newport, Orange Co.	21- 6-10	3,255	recemented
West. Drlg. & Prod. Co., No. 1 Newport, Orange Co.	18- 6-10	904	sd. drilling
Hall Pet. Co., No. 1 Murrietta, Riverside Co.	23- 7- 3	931	cleaning out
Hemet Pet. Co., No. 1 Ward, Riverside Co.	9- 5- 1	3,030	hd. sd. drilling
Davenport O. & G. Co., No. 1 San Marcos, San Diego Co.	30-12- 2	855	hd. sd. drilling
Turner, S. S., No. 1 Escondido, San Diego Co.	25-12- 2	1,600	cemented
Torrey Pines Oil Co., Well No. 1, San Diego Co.	18-14- 3	1,974	suspended

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Milham Explto., No. 1 Kettleman, Kings Co.	2-22-17	7,235	1,000 bbls.
Bolsa Chica, No. 1 Kettleman, Kings Co.	20-25-19	3,502	resume work
California Oil Co., No. 1 Kettleman, Kings Co.	12-23-19	Rig	suspended
General Pet. Co., No. 2 Ochsner, Kettleman Hills	26-22-18	6,755	rig. rotary
South Coalinga, Well No. 1, Kettleman Hills	35-24-19	3,110	clean. out
Monocline Dev. Co., Well No. 1, Kettleman Hills	7-21-21	4,308	suspended
McPhail, Hugh, Well No. 1, Kettleman Hills	13-24-18	2,100	suspended
California Western Oil Co., No. 1 Elkins, Ventura Co.	28- 4-19	2,951	testing
Exline, Emma, No. 1 Saticoy, Ventura Co.	33- 3-21	2,412	fishing
Ohio Oil Co., No. 1 Saticoy, Ventura Co.	32- 3-21	Mtl.	building rig
Standard, No. 5 Saticoy, Ventura Co.	1- 2-22	2,977	hd. sd. drilling
Petroleum Sec., No. 1 Diablo, Ventura Co.	26- 5-18	6,277	hd. sd. drilling
American Oil Co., No. 1 Camarillo, Ventura Co.	33- 2-20	555	hd. sd. drilling
Star Pet. Co., No. 2 Canet, Ventura Co.	13- 3-23	6,775	suspended
Shell Co., No. 1 Grubb, Ventura Co.	26- 2-22	5,310	suspended
Bolsa Chica, No. 1 Temescal, Ventura Co.	3- 4-18	Mtl.	building rig
Miley, E. J., No. 2 Casitas, Ventura Co.	12- 3-21	775	clean. out
Shell, No. 2 Berlywood, Moorpark	33- 3-20	7,240	suspended
Continental, No. 1 Sulphur Mountain, Ventura Co.	21- 4-22	2,280	redrilling
Continental, No. 2 Sulphur Mountain, Ventura Co.	22- 4-22	2,506	sd. sh. drilling
Milham Explto., No. 1-A Buttonwillow, Kern Co.	8-28-23	4,662	gas well
Milham Explto., No. 2 Buttonwillow, Kern Co.	8-28-23	2,720	gas well
Milham Explto., No. 3 Buttonwillow, Kern Co.	8-28-23	2,694	gas well
Milham Explto., No. 4 Buttonwillow, Kern Co.	6-28-23	2,670	gas well
Milham Explto., No. 5 Buttonwillow, Kern Co.	5-28-23	2,500	gas well
Milham Explto., No. 6 Buttonwillow, Kern Co.	8-28-23	2,676	gas well
Milham Explto., No. 7 Buttonwillow, Kern Co.	6-28-23	2,720	suspended
Milham Explto., No. 8 Buttonwillow, Kern Co.	16-28-23	3,053	suspended
Doheny-Stone, No. 1 Salisbury, Kern Co.	7-29-24	4,291	suspended
South. Calif. Gas Co., No. 1 Buttonwillow, Kern Co.	4-28-23	4,272	suspended
South. Calif. Gas Co., No. 2 Buttonwillow, Kern Co.	27-28-23	Rig	suspended
Richfield Oil Co., No. 1 Semitropic, Kern Co.	21-26-22	3,997	sd. sh. drilling
Pacific Eastern, No. 1 Union Ave., Kern Co.	6-30-28	5,640	suspended
Pacific Eastern, No. 2 Union Ave., Kern Co.	6-30-23	4,500	suspended
Pacific Eastern, No. 3 Union Ave., Kern Co.	6-30-28	4,443	gas, shut in
Pacific Eastern, No. 4 Union Ave., Kern Co.	6-30-28	5,450	sd. sh. drilling
Pacific Eastern, No. 5 Union Ave., Kern Co.	5-30-28	4,991	suspended
Stabler, W. W., No. 1 Comanche Point, Kern Co.	23-32-29	2,860	fishing
General Pet., No. 3 Edison, Kern Co.	5-30-29	Mtl.	building rig
Midway Northern, No. 1 Edison, Kern Co.	29-29-30	3,720	hd. sd. drilling
Deizel, S. A., No. 1 Delano, Kern Co.	4-26-27	3,116	suspended
Pacific Coast Oil Co., No. 1 Rio Bravo, Kern Co.	15-29-25	42	cemented
Elmer Oil Co., No. 1 Shafter, Kern Co.	8-28-25	2,670	sd. sh. drilling
Standard, No. 1 San Emidio, Kern Co.	35-11-22	1,976	hd. sd. drilling
Union, No. 1 San Emidio, Kern Co.	5-10-21	Mtl.	building rig
Fresno Madera Oil Co., No. 1 Clovis, Fresno	18-12-21	4,194	suspended
Currency Pet. Co., No. 1 Vineyard, Fresno Co.	28-21-14	116	sd. drilling
Union, No. 1 Huasna, San Luis Obispo	34-32-15	3,073	redrilling
Union, No. 1 North Huasna, San Luis Obispo Co.	12-32-14	2,022	br. sh. drilling
Panorama Oil Co., Well No. 1, San Luis Obispo Co.	7-31-21	3,104	br. sh. drilling
Sequoia Oil Co., Well No. 2, San Mateo Co.	15- 7- 5	1,605	suspended
Sunset Pacific, No. 1 Saratoga, San Mateo Co.	13- 7- 4	Rig	suspended
Shell, No. 2 Cowell, San Mateo Co.	8- 6- 5	3,694	testing
Shell, No. 1 Butts, San Mateo Co.	16- 6- 5	3,342	hd. sd. drilling
Shell, No. 3 Petaluma, Sonoma Co.	8- 6- 5	698	hd. sd. drilling
Calhoma Oil Co., No. 1 Livermore, Alameda Co.	9- 3- 3	1,350	suspended
Foster & Hammill, Well No. 1, Alameda Co.	21- 3- 3	Rig	suspended
R. Y. Hanlyn, Well No. 1, Alameda Co.	3- 5- 2	3,321	hd. sd. drilling
Standard, No. 1 Lompoc, Santa Barbara Co.		Mtl.	building rig
Tepesquit Oil Co., Well No. 1, Santa Barbara Co.	3- 9-32	2,710	suspended
Becker, Geo. F., No. 1 Summerland, Santa Barbara Co.	33- 4-25	3,090	suspended
Continental, No. 1 Carpenteria, Santa Barbara Co.	33- 4-25	975	sd. drilling
Colus Oil Co., Well No. 1, Colusa Co.	31-15- 4	380	redrilling
Nuna Oil Co., Well No. 1, Colusa Co.	19-15- 5	400	hd. sd. drilling
Superior Oil Co., No. 1 Calivada, Coluna Co.	31-15- 4	1,011	suspended
Marland Oil Co., No. 1 Bradley, Monterey Co.	32-24-11	4,861	bad pipe
Brown Oil Co., No. 1 Parkfield, Monterey Co.		.....	grading
North Counties Oil Co., Well No. 2, Humboldt Co.	36- 2- 1	2,205	suspended
Humboldt Oil Co., Well No. 1, Humboldt Co.	6- 2- 1	3,041	redrilling
Kuhns, H. L., Well No. 1, Merced Co.	9-12- 9	1,516	hd. sd. drilling
Tuck, J. W., Well No. 1, Santa Clara Co.	9- 8- 1	600	suspended
L. A. Madera Synd., Well No. 2, Madera Co.	21-10-17	2,690	hd. sd. drilling

er chaotic condition with some companies operating to capacity because of stringent lease requirements, others shut down entirely and another group pumping line wells only.

The production of heavy unrefinable crude presents a rather serious situation and it would not be at all surprising if another concerted attempt is made shortly to induce all producers of heavy oil to temporarily suspend production until after the crisis has been passed at Santa Fe Springs. If producers of heavy unrefinable crude continue to produce either through choice or because of lease obligations a general downward revision in the price of heavy oil may be the ultimate result.

Many operators are of the opinion that conditions in California will show a definite improvement after Santa Fe Springs has passed out of the picture and while this may be partially true there are too many deep zones and potentially productive areas awaiting development to permit an early return to normalcy. It is unnecessary to call attention to the fact that deep-zone exploitation at Inglewood will probably get under way within a short time after the crisis has been reached at Santa Fe Springs. Kettleman Hills in Kern County may also become an important factor late next year as the Milham Exploration Co.'s discovery well in that area has opened up a structure approximating 5 miles in length. The importance of a potentially productive area of these dimensions is quite obvious.

There are two other domes in the Kettleman Hills which may also prove productive and while this entire area requires deep drilling, 7,000-foot producers have ceased to be a novelty in California. The Elwood Terrace Field of Ventura County can also be expected to yield its share of future production and, while it is the present intention of the Barnsdall Oil Co. to limit the output of this field to approximately 25,000 bbls. per day, this company cannot be expected to maintain this artificial curtailment indefinitely. The Marland, Associated and Standard Oil Companies may also be expected to resume normal development work in the Seal Beach Field of Los Angeles Basin as soon as they can consistently do so.

Deep-zone development in the Midway-Sunset Field of Kern County and additional drilling in the Fruitvale Field, and possibly also in the Union Avenue area, are other factors which will influence future production. Lawndale, Potrero and Rincon may also subsequently become fields of prime importance. The oil industry in California has accomplished considerable good by mutual cooperation among producers but the achievements recorded up to the present time are really only a step in the right direction. Those familiar with conditions recognize the necessity of future regulation of production either mutually or compulsory.

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Crude oil	.....	.....	.....	.....	2,839,583	8,777,164
Fuel oil	31,850	4,550	.....	.....	143,471	6,716,619
Diesel and gas oil	131,325	18,761	.....	.....	1,674,439	2,303,789
Gasoline	426,237	60,891	469,221	67,032	11,689,622	7,774,848
Tops	79,500	11,357	.....	.....	339,100	.....
Coastwise—						
Crude oil	459,407	65,630	300,440	42,920	20,469,477	20,996,307
Fuel oil	407,570	58,224	368,376	52,625	13,754,811	11,094,337
Diesel and gas oil	23,993	3,428	47,679	6,811	963,780	341,207
Gasoline	323,640	46,234	272,640	38,947	7,786,405	8,452,400
Kerosene	245	35	1,592	227	65,898	221,684
Tops	.....	.....	.....	.....	171,566	219,255
Exports—						
Crude oil	.....	.....	67,550	9,650	1,785,457	2,074,890
Fuel oil	345,268	49,324	421,574	60,225	18,907,937	24,426,564
Diesel and gas oil	39,488	5,641	3,536	505	1,967,340	1,247,149
Gasoline	272,078	38,868	386,188	55,170	6,139,290	4,433,037
Tops	.....	.....	.....	.....	.....	227,204
Kerosene	.....	.....	.....	.....	3,486,074	1,894,871

TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC, GULF COAST PORTS

Diesel and gas oil	.....	.....	.....	.....	342,425	762,762
Gasoline	78,074	11,153	.....	.....	1,750,169	1,850,487
Lubricants	.....	.....	.....	.....	277,151	370,180
Coastwise—						
Fuel oil	68,301	9,757	4,022	575	3,050,072	4,380,219
Diesel and gas oil	3,976	568	3,983	569	267,211	216,590
Gasoline	137,607	19,658	115,183	16,455	3,863,914	4,483,815
Kerosene	17,219	2,460	4,780	683	203,177	208,491
Exports—						
Crude oil	.....	.....	.....	.....	96,250	.....
Fuel oil	73,582	10,512	.....	.....	2,063,154	2,325,820
Diesel and gas oil	.....	.....	.....	.....	10,400	.....
Gasoline	68,802	9,829	86,452	12,350	3,822,518	2,613,032
Kerosene	.....	.....	6,680	954	470,760	897,155
Lubricants	.....	.....	.....	.....	33,535	26,695

Long Beach

Hoyt & Wilson carried off completion honors in the Long Beach Field during the past week by finishing No. 1 Merritt, a new well flowing 3,505 bbls. of clean 30.2 gravity oil and 3,600,000 feet of exceptionally heavily saturated wet gas daily from 6,720 feet. The hole was finished with a 4½-inch oil string carrying 861 feet of perforated and was cemented through perforations at 5,859 feet. The Olympic Refining Co. also brought in a good well when No. 2 Barham was turned loose from 6,823 feet after being finished with a 5¾-inch oil string carrying 610 feet of perforated. It showed an initial daily production of 1,640 bbls. of clean 30.4 gravity oil and 4,100,000 feet of saturated gas daily. No. 2 Woolner of the Butler Oil Co., another new well, was about on a par with this producer as it started off doing 1,650 bbls. daily from 6,703 feet, the hole having been finished with a 6⅝-inch oil string carrying 670 feet of perforated. The Shell's No. 30 Alamitos was a distinct disappointment when given a test from 6,579 feet during the early part of the week after being cleaned out to bottom as it only showed an initial of 516 bbls. of 29.1 gravity oil daily. The output is cutting about 20 per cent water and it is thought that production will show a substantial increase after this condition has been corrected. The State company put No. 1 Bradbury on a production test several days ago but was subsequently forced to kill the flow because of an excessive water content. This well, which was carried down to 8,065 feet but later plugged back to 7,530 feet, flowed at the rate of 750 bbls. daily and built up a pressure in excess of 2,000 pounds just previous to being killed for corrective work.

Seal Beach

The Marland Oil Co. averaged one completion a week in the Seal Beach Field during the month of October and three more potential producers should be brought in during the month of November. The Marland's latest acquisition at Seal Beach was No. 3 Selover, which was returned to production flowing 1,160 bbls. of clean 26.5 gravity oil daily after being redrilled and deepened to 5,420 feet. The three previous wells, which were also recompletions after being redrilled and deepened from the upper to the lower horizon, were No. 4 Selover, which was brought in making 1,740 bbls. daily, No. 10 Selover doing 1,480 bbls. and No. 14 Selover, which came in under a natural flow during the early part of the month, doing 2,300 bbls. per day from the deep Bonner zone at 6,900 feet. These four recompletions chalked up by the Marland during October had an aggregate initial daily production of 6,680 bbls. The Standard, which is running two strings of tools in this field at the present time, is expected to finish No. 15 San Gabriel within the next 15 days. The Texas Company should also chalk up a new well soon as No. 1 Lovell at Alamitos Heights is rotating ahead in an exceptionally well saturated oil sand at 2,276 feet.

Deep-sand exploitations at Long Beach and the intensive development campaign under way at Santa Fe Springs has diverted attention from the other older fields where flush production has become a thing of the past. A limited amount of development work is still under way in these settled fields, however, where competition is less keen and operators are not penalized because of the time element. Huntington Beach occupied the limelight during the early part of 1927 due to the opening up of the town lot area during the latter part of 1926 and, although drilling operations in this area have been rather limited during the past several months new wells have been chalked up from time to time. During the early stages of drilling the shallow zone was passed up in the mad scramble to participate in the flush production yielded by the lower horizon but during the past several months a number of operators have been exploiting the top sand.

The two latest completions in the upper zone were No. 24 Huntington of the Western Drilling & Production Co. and No. 1 Extension of the Sextet Oil Co., both new wells. The former came in pumping 195 bbls. of relatively clean 14.6 gravity oil daily from 2,125 feet, while the latter made 90 bbls. of 14.5 gravity oil initially when put on the beam at 2,250 feet. Although these shallow wells yield a heavy oil they are nevertheless commercially productive because they can be drilled in a minimum time and at small expense. A few hundred feet of stove pipe and approximately 2,000 feet of 10¾-inch is all the pipe that is necessary as the latter is usually a combination string.

Lawndale

Although the existence of a possible new field at Lawndale was revealed several months ago by the San Clemente Oil Co.'s No. 1 Peck, development work has been rather slow in getting under way. This delay is due to the fact that operators are a little dubious as to the potentialities of this field, although the discovery has maintained a consistent flow of 165 bbls. daily since completion. This area should be watched closely during the next few weeks, however, as a number of new wells may be started in the very near future. The Lawndale Field got off to a rather inauspicious start due principally to inefficient drilling and poor geological advice. These difficulties have subsequently been corrected, however, and those interested in this field are anxiously watching the outcome of the Smith Brothers' No. 1 Peck now nearing completion. This well picked up a shale body a few days ago at 5,150 feet and the hole is being reamed preparatory to setting pipe. Correlation work indicates that this well is running considerably higher than the discovery, No. 1 Peck, which was finished at 5,814 feet, and if it is nearer the apex of the structure favorable production may be anticipated.

Drilling operations in the Potrero Field of Los Angeles Basin have also been rather slow in getting under way, due principally to litigation covering most of the potentially productive acreage in the town lot area north of present production. Drilling restrictions have also hindered development as the Inglewood City Council has refused to permit a general drilling campaign pending further developments. This legislative body granted Graham & Loftus a permit to drill one well in order to determine the potentiality of the town lot area north of the Associated's holdings before lifting all drilling restrictions but development work was indefinitely suspended when a search of title indicated a duplication of leasing. The Associated's No. 1 Voorhes, south of the discovery well, has taken on a rather doubtful outlook at 6,120 feet, although few wells in southern California can be definitely classed as out of the running above the 8,000-foot level. The company has given up the attempt to develop commercial production in both No. 1 Pacific Southwest and No. 3 Cypress and drilling has accordingly been resumed. The former was given a chance to make a bid for production at 4,777 feet but it failed to come up to expectations. No. 3 Cypress, which surprised the Associated's field depart-

(Continued on Page 110)

IMPROVEMENT IN EASTERN FIELDS; ACTIVITY IN MONROE COUNTY, W. VA.

By D. S. Wakenight
Staff Correspondent, Eastern Fields

PITTSBURGH, Pa., Nov. 5.—The size of some of the wells completed during the week showed improvement over the past few weeks. The deep sand territory in southeast Ohio continues to furnish all of the good producers. West Virginia and southwest Pennsylvania completed more gas than oil wells.

The monthly field report for October shows fewer wells completed, less new production, more dry holes and gas wells than in the preceding month. At the close of the month the new work under way and starting shows considerable increase over September, due to the large amount of work started during the last half of October. At this time there is new work starting in many of the old districts that have been quiet for several weeks. Cleaning out, drilling deeper and shooting old wells is still an outstanding feature in the eastern fields. The amount of new production from these wells is small, but in the aggregate will be considerable.

Good Producers for Week

In Section 6, Jackson Township, Muskingum County, the Pure Oil Co. has completed and shot in the Clinton sand a test on the Zeonatta W. Brown farm. It produced 130 bbls. the first 24 hours.

In the NE of Section 21, Harrison Township, Perry County, William Cline and others completed in the same formation No. 4 on the J. C. Bowers farm. It had an initial production of 110 bbls. In the SW of Section 12, Reading Township, the Preston Oil Co.'s second test on the Charles W. Spohn farm produced 85 bbls. the first 24 hours.

In the NW of Section 12, Reading Township, Perry County, the Preston Oil Co. completed and shot in the Clinton sand a second test on the Charles W. Spohn farm which produced 85 bbls. the ensuing 24 hours.

In Section 24, Green Township, Hocking County, the Griffin Producing Co. has a 15-bbl. pumper at a second test on the G. Lowe farm. In Section 38, Coal Township, Perry County, the Buckstone Oil & Gas Co.'s No. 8 on the John C. Wion farm is a duster.

In the SE of Section 19, Harrison Township, Perry County, the Ohio Fuel Gas Co.'s test on the Amy Brown farm is a gasser in the Clinton sand good for 3,750,000 feet. In the SW of Section 15, Washington Township, Hocking County, the Gordon Oil Co.'s test on the G. W. Emarine farm is a gasser in the same formation good for 500,000 feet.

Licking County

In the SE of Section 1, Hopewell Township, Licking County, the Pure Oil Co.'s second test on the J. W. Elsworthy farm is a 30-bbl. producer in the Clinton sand. In Section 9, Perry Township, Licking County, M. F. Whitehill has a 15-bbl. pumper in the Berea grit at No. 5 on the Alice Ashcraft farm.

The Preston Oil Co.'s No. 7 on the James G. Wright farm is a 5-bbl. pumper. In Licking Township, the A. H. Heisey Co. has a gasser in the Berea grit at No. 3 G. W. Dustheimer farm.

In Rush Creek Township, Fairfield County, George W. Guthrie and others are drilling a second test on the G. W.

(Continued on Page 160)

VALVE EVERY NEED!

s becoming more and more a practice of the larger operators. Learn the certain exclusive refinements of design of Westcott Valves that mean so much in the life and efficiency of these valves.

18″ 400 Lb. Working Pressure Check Valve.

Bronze seats and discs or clapper rings.

Bronze bushed in the pin hole. In this size a 4″ auxiliary clapper valve is provided.

1,600 Lb. Westcotts, All Steel, Solid Wedge Drilling Gate Valve. Made in all casing sizes and to A.P.I. Standards.

"If CONTINENTAL Sells It, There Is No Better"

THE CONTINENTAL SUPPLY COMPANY

General Offices: St. Louis

Export Office: 74 Trinity Court, New York

London Office: 316-317 Dashwood House, Old Broad St., E. C. 2

THE CONTINENTAL SUPPLY COMPANY, Ltd.

411 Lancaster Bldg., Calgary, Alberta, Canada

WESTCOTT VALVES

NENTAL

Find New Sand East of Ambrose Pool

Well Near Lem, Floyd County, Kentucky, Credited With 50 Bbls. and Big Gas Flow. Decrease in Tri-County Area in September

By Whit
Staff Correspondent, Kentucky-Tennessee

WHITESVILLE, Ky., Nov. 5. — One of the most interesting finds of late in the western area of Kentucky was the opening up of another sand in the field around the Hamilton leases in the eastern portion of the Ambrose Pool, in Ohio County. James C. Ellis drilled his No. 6 on the B. L. Gossett farm, finding the Jett sand, the big producer of that area, as dry as a bone and, concluding to make a deeper test, kept the drill moving until a new sand for that part of the field was found at 85 feet below the bottom of the Jett, where the tools were lost at the bottom of the new sand and a fishing job resulted. This new sand is pronounced the Jones sand, same as found in Daviess County, about 3½ miles west of Whitesville, and if this proves true, it means a new producing sand for the east side of the Ambrose Pool and may bring about the drilling deeper of some of the wells that failed to produce oil from the Jett. It is really the outstanding feature of the week and may mean much for leaseholders in the vicinity of the pool. Possibly this Jones sand will be found in the heart of the Ambrose Pool, on such leases as the Weller, Ambrose, Mary Elmore, Cora Wells and others, that have proved such large producing properties to say nothing of the possibilities to the east on such producing leases as the Bob Hamilton, Griffith heirs, Keith, Jane Daniels and others. The same conditions may prevail in the Dundee and Sunnydale areas of Ohio County.

Another interesting development was made in the extreme eastern part of Kentucky, in the Beaver Creek territory, near the town of Lem, in Floyd County, in District 21, where the Kentucky-West Virginia Gas Co. brought in No. 1 on the Allen farm, credited with a production of 50 bbls. by good authority. The Huntington, W. Va., Herald, says of this well: "An oil and gas well, drilled on the J. N. Allen farm, at Lem, Floyd County, Kentucky, struck on October 16, was yielding 10,000,000 feet of gas a day and 3,600 bbls. of oil at a test, T. E. Dimick, trustee of the group which holds the oil rights of the well, said yesterday. The well was drilled by the Kentucky & West Virginia Gas Co., which owns the gas rights and which operated under a lease taken several years ago. When the lease was transferred in 1919, a group of stockholders of the Keystone Gas Co., since dissolved, reserved the oil rights in the tract of land on which the well was drilled and several thousand acres adjacent. The group of Huntingtonians who now have the oil rights on the well are T. E. Dimick, trustee of the group, Judge John H. Holt, H. C. Duncan, Jr., G. H. Dimick and associates. When the well was struck, Mr. Dimick said, it was impossible to control the flow of oil and gas, and the well gushed unbridled for 12 hours. It is the greatest gusher ever struck in Kentucky, he said, and the only one in the territory to yield both oil and gas. Due to this fact, the products can not be marketed until a gas and oil separator is obtained."

Hancock County Gas

H. H. Vickers and others, drilling in Hancock County, northeast of Fordsville in the western division of the State, are reported to have struck a heavy flow of gas, within good distance of projected gas distribution lines, and not far from Pellville. No oil was found in the sand drilled, but the heavy gas flow indicated the nearness of a good pool, experienced oil people in the field declare. The gas was shut in to conserve it until such time as it may be marketable.

James C. Ellis, Owensboro, Ky., operator, who has been very fortunate in his development work in Ohio County, has had his first bad luck, when his office at Taffy, in Ohio County, was destroyed by fire and the records of his wells were lost.

The Producers Pipe Line Co. shipped four big river tankers of crude oil during the week, two going up the Ohio River to Louisville on Monday and two more on Saturday. The extension of the Producers Pipe Line Co. from its station at Taffy to the Red Hill Pool, in Daviess County, has been pushed to about one-half the distance of the projected line. Five miles of the line has been laid, but only about 3 miles of it has been connected. It will require three or four more weeks to connect the line into the Red Hill Field.

Tri-County Field Production

According to the State's report of oil production in the counties of Ohio, Daviess and Hancock, for September there was a decrease of 6,311.84 bbls. compared with August production, which does not include runs of 254.01 bbls. from McLean County. The total runs of Ohio County for September were 159,965.64 bbls., against the August figures of 165,810.02 bbls., a loss of 5,844.38 bbls. Daviess County production for September was 80,684.96 bbls., and for August was 80,920 82 bbls., a loss of 235.86 bbls. Hancock County production for August amounted to 1,460.99 bbls., and for September, 1,229.39 bbls., a decrease of 231.60 bbls.

The State report shows that for the delivery of oil during September there was paid a total of $394,678.42, the largest amount yet paid to the industry in the Tri-County Field. Landowners were paid out of this total the sum of $49,334.80. All landowners get one-eighth of all production and the operators of the lease seven-eighths. The latter often is divided between a number of owners of a lease.

Week's Work

A summary of the week's work in the Kentucky fields shows 26 completions, 16 producers with an initial production of 612 bbls., 8 dry holes and 2 gas wells.

County—	Comp.	Oil Wells	Prod.	Dry	Gas
Ohio	14	8	235	4	2
Daviess	9	7	327	2	0
Allen	2	0	0	2	0
Floyd-Knott	1	1	59	0	0
Total	26	16	612	8	2

Ohio County Wells

No large completions were reported from the Ohio County fields, but in the new area around Fordsville there is an active campaign just opening which accounts for the number of new wells starting and drilling in the county at the close of the month.

The Ohio Oil Co.'s No. 17 on the J. C. Ellis farm, in the Ambrose Pool, is a 75-bbl. producer. This farm adjoins the Weller 110 acres on the east and contains 204 acres, with many locations yet to drill. Same company's No. 4 on the J. H. Davis 124 acres, southwest of the Ambrose Pool and near Union Church, is credited with an initial production of 50 bbls. from a depth of 755 feet. Same company's No. 2 on the Eila Henning, in the Whittaker Pool, is good for 10 bbls. Same company is drilling No. 2 W. T. Greer and No. 2 Rosette Taylor, in the same pool.

Ray Bigler and others' No. 4 on the Ed Hendricks farm, in the Whittaker Pool and about 6 miles south of Whitesville, is reported showing for 25 bbls.

Snowden & McSweeney's No. 10 on the J. R. Ellis, in the Ambrose Pool, is a 15-bbl. producer.

James C. Ellis drilled a dry hole in his first venture on the Wade heirs farm east of the Ambrose Pool, adjoining good production on the Daniels farm and only a short distance north of the rich Hamilton 276 acres owned by the Cumberland Petroleum Co. This well was quite a surprise, but a dry hole may be found where least expected, especially in Kentucky.

Leeper Oil Co.'s No. 1 on the B. M. Evans farm, near the Ambrose Pool, is reported at 20 bbls. initial production.

In the Fordsville area, M. F. Stirman's No. 3 on the Nancy Farmer, near Friendship Church, was a duster, while No. 4, same lease, showed an initial of 35 bbls. No. 5 is now under way.

Near Friendship Church, the Wood Oil Co. drilled a 250,000-foot gas well on the T. J. Barnett, while this company's No. 1 C. E. Evans is reported good for 1,000,000 feet of gas.

In the Deanfield area, Russel, Brenner and Adams' second test on the H. F. Bellamy is good for but 5 bbls.

J. M. Meredith drilled a dry hole in a test on the Ves Whitley lease, far in advance of good production.

Daviess County Wells

The best of the late completions in Daviess County was Smith, Randolph and others' No. 4 on the Oscar Wells farm, in the Brown Pool, with an initial production of around 150 bbls.

D. C. Stimson and others' Nos. 4 and 5 on the Mayfield, in the Red Hill district, are showing for 25 bbls. each, according to late report.

Wade and Moore's second test on the E. L. Baird farm, in the Jones Pool, is good for 40 bbls. initial.

L. S. Clugh and others' No. 6 on the C. M. Jones farm, in the Jones Pool, west of Whitesville, is rated good for 70 bbls. initial production from the Jones sand. This Jones sand is attracting widespread attention, as it has been found far in advance of the pool and across the Daviess County line, east of the Ambrose Pool, in Ohio County, where it was found in James C. Ellis' No. 6 on the B. L. Gossett lease where the Jett sand proved dry. There is a possibility of this sand being found in the Ambrose and other pools.

Leeper Oil Co.'s No. 6 on the W. L. Barnett 50 acres, is reported a 15-bbl. pumper.

Imperial Oil & Gas Co.'s No. 3 on the Jimmie Hayden, in the Jones Pool, is a 12-bbl. pumper.

John Lyle and others' No. 1 on the Cooper heirs farm, is a duster, as is Jess Watts and others' No. 1 on the J. S. Wedding farm.

Allen County

In the Settle area of the Scottsville Field, in the northeastern part of Allen County, H. K. Parsons drilled a dry hole in No. 8 on the B. R. Freeman, at a depth of 350 feet.

Harley and Coatsworth's No. 3 on the P. Welch, in the same field, was also a duster at 400 feet.

W. K. White, residing at Hollywood, Calif., an old-time operator in the eastern

(Continued on Page 72)

MURPHY POOL, SENECA COUNTY, GETS WELL MAKING 125 BARRELS

By Whit
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Nov. 5. — In the Murphy Pool, in Liberty Township, Seneca County, the Muncy Valley Oil & Gas Co.'s No. 10 well, 800 feet from the south line and 500 feet from the west line of the Joseph Kimmet, Section 28, struck top of sand at 1,314 feet and found pay sand after drilling 72 feet in the sand, to a total depth of 1,386 feet, producing an initial of 125 bls. No. 11, same farm, is starting.

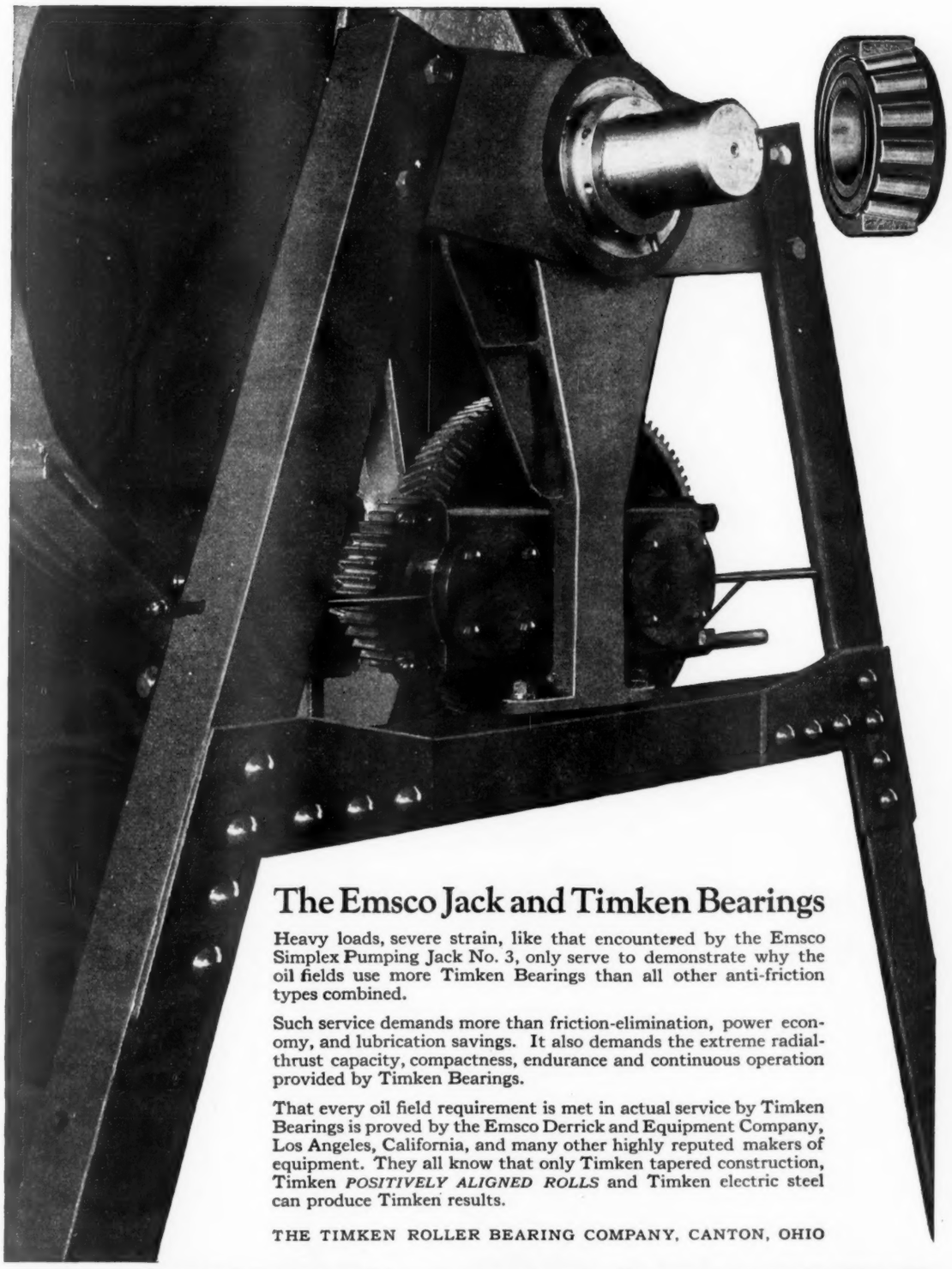
One of the interesting strikes in this field was made by T. F. O'Brien and others in their test, 200 feet from the north line and 400 feet from the south line of the Milo Saul, in the northeast quarter of Section 36. Top of sand was found at 1,409 feet and drilled 245 feet into the sand, developing a gas well good for 1,000,000 feet. The Sun Oil Co. drilled No. 4 well, 250 feet from the east line and 400 feet from the west line of the J. Hunker, Section 28, which developed salt water in abundance, as is the case with many of the wells drilled in and around the Murphy Pool. The Sun company's well topped the sand at 1,309 feet and found the water at 85 feet in the sand. In Pleasants Township, same county, Geyer and Shaul drilled a dry hole in a test on the S. Smith, Section 19, and in Jackson Township, Johnson, Merriman and others abandoned Nos. 13, 14 and 15 on the Henry Stahl, Section 16. In Liberty Township, the Kernel Oil Co.'s test, 800 feet from the south line and 250 feet from the east line of the T. W. Rinebolt, in the northeast quarter of Section 29, was drilled 113 feet in the sand at a total depth of 1,485 feet and dry. This is on the oil map as the T. N. Yocum farm.

Wood County

In Wood County, Bloom Township, Mays & Bushey's test on the Dave Beihler, Section 31, produced 12 bbls. initially at a total depth of 1,373 feet, or 247 feet in the sand. This farm, is on the oil map as the J. C. Baker. In Liberty Township, the Ohio Oil Co. abandoned Nos. 15, 17 and 25 on the Lehman Brothers, Section 1. In Plain Township, J. M. Walters pulled out old No. 1 on the Charles R. Nearing, Section 36. In Montgomery Township, the Ohio Oil Co. abandoned Nos. 1, 2, 3, 5 and 6 on the T. S. Carman farm, Section 14. These wells were drilled along during the early nineties and have produced for many years. In Middleton Township, H. E. Berry's test on his own farm, Section 21, produced 8 bbls. under pump. Sand topped at 1,230 feet and oil at 39 feet in the sand. George L. Daley's second test on the Daly 80 acres, in the southwest quarter of Section 34, Webster Township, topped sand at 1,190 feet and produced 5 bbls. initially at 52 feet in the sand. Lantz, Schulte and others are drilling a test on the Simon Achenberger, Section 32. Lake Township, south of Toledo. In Perrysburg Township, George W. Huffman and others are starting No. 3 on the Mary Reitzel, Section 23, and George L. Haubert and others are starting No. 5 Catherine Smith farm, Section 29.

In Allen County, Bath Township, C. A. Peavy abandoned No. 9 on the C. M. Lenney, Section 2. Frederick Roderick,

(Continued on Page 72)



The Emsco Jack and Timken Bearings

Heavy loads, severe strain, like that encountered by the Emsco Simplex Pumping Jack No. 3, only serve to demonstrate why the oil fields use more Timken Bearings than all other anti-friction types combined.

Such service demands more than friction-elimination, power economy, and lubrication savings. It also demands the extreme radial-thrust capacity, compactness, endurance and continuous operation provided by Timken Bearings.

That every oil field requirement is met in actual service by Timken Bearings is proved by the Emsco Derrick and Equipment Company, Los Angeles, California, and many other highly reputed makers of equipment. They all know that only Timken tapered construction, Timken *POSITIVELY ALIGNED ROLLS* and Timken electric steel can produce Timken results.

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

TIMKEN *Tapered Roller* **BEARINGS**

MEN KNOWN IN OILDOM

D. J. Moran

D. J. Moran, president of the Marland Oil Company, is regarded as one of the most capable and widely experienced oil men in the country. His association with The Texas Company for 20 years gave him a diversity of training seldom enjoyed and his natural ability, with this extensive training, quickly placed him in the forefront of the younger executives in the petroleum industry.

Mr. Moran was born in Cygnet, Ohio. He attended the public schools at Lima, Ohio, and graduated in 1908 from the Case School of Applied Science with the degree of Bachelor of Science in mechanical engineering. After his graduation, he was employed for a time by the Oklahoma Iron Works, Tulsa, and in the fall of 1908 went with The Texas Company, acting as telegraph operator, pumper, gauger, connection foreman, station foreman and on various leases and pump stations in Oklahoma. He was transferred to Port Arthur, Tex., in 1910, and from 1912 to 1916 he was chief engineer on construction and maintenance at the Port Arthur works. Within this period, he was sent to Panama for one year as representative of The Texas Company, and in 1917 he went to Mexico in charge of the Tampico works, Agua Dulce works and the pipe line systems. Throughout 1919, he served as general superintendent of the southern terminals of The Texas Company.

In 1922 Mr. Moran was made manager of the production department of The Texas Company, with headquarters at Houston, and, with the widening activities of The Texas Company and his own increasing duties, Mr. Moran was transferred to the general headquarters of the company in New York in 1925. Mr. Moran took an active part in co-ordinating matters pertaining to the merger of The Texas Company and the California Petroleum Corporation.

Mr. Moran resigned as vice president, from The Texas Company, effective November 1, to become president, director and a member of the executive committee of the Marland Oil Company, succeeding E. W. Marland who resigned.

PERSONAL PARAGRAPHS

Carroll V. Sidwell has moved from Eastland, Tex., to Tulsa.

* * *

George T. Crouse of Enid, Okla., is moving to Marion Kansas.

* * *

Larry Hart of Riverton, Wyo., has joined the geological department of the Pan American Company and will have his headquarters at Tampico, Mexico.

C. Frost Liggett of Lamar, Colo., has moved to Los Angeles, Calif.

* * *

J. B. Templeton of Tulsa is leaving for South America on a business trip.

* * *

George D. Williams of Wichita, Kans., has moved to Brownsville, Tex.

* * *

M. F. Moroney, oil producer of Okmulgee, Okla., is back home after a brief visit in Indiana.

* * *

N. A. Merritt, head of N. A. Merritt & Company, New York, spent the past two weeks in Tulsa.

* * *

E. R. Perry, chairman of the board of the Superior Oil Corporation, is a visitor in New York.

* * *

G. L. Rowsey is moving from Amarillo, Tex., to join the Great West Refining Company at Big Spring, Tex.

* * *

E. L. Thomas of Oil City, Pa., agent for the Southwest Pennsylvania and Eureka Pipe Lines, visited Pittsburgh.

* * *

R. E. Fry of the Casper, Wyo., offices of the Midwest Refining Company, is visiting friends and relatives in Oklahoma.

* * *

Dr. H. Foster Bain, secretary of the American Institute of Mining & Metallurgical Engineers, was a recent visitor to Tulsa.

* * *

Samuel M. Greenidge, chief of the engineering staff of the Texas Pacific Coal & Oil Company, was a recent visitor to Tulsa.

* * *

H. N. Pardee, umpire for the proration plan in Winkler County, Texas, was a business visitor in Fort Worth, Tex., last week.

* * *

L. E. Hults, Fort Worth, Tex., independent operator, has returned to his offices following a brief business trip to West Texas.

* * *

Paul S. Ache, president of the Reiter-Foster Oil Corporation, has returned to Tulsa after a trip of inspection over the Texas fields.

* * *

J. R. Poulsen, Jr., geologist for the Doheny interests with headquarters in Los Angeles, Calif., is in West Texas on company business.

* * *

R. V. Logan of the Logan Map Company, Fort Worth, Tex., has returned from a business trip through New Mexico and West Texas.

* * *

J. V. Terrill, district geologist for the Gulf Production Company in the Texas Panhandle, was a recent business visitor to Fort Worth.

* * *

Dr. E. R. Lederer, vice president Texas Pacific Coal & Oil Company, Fort Worth, Tex., has returned from a business trip to New York.

* * *

W. A. Williams, president of Crown Central Petroleum Corporation, Houston, Texas, has returned from a two weeks' business trip to New York.

* * *

Victor A. Hays of Independence, Kans., manager of the gas properties and pipe lines of the Prairie Oil & Gas Company, was in Wyoming recently.

* * *

T. J. McMahon, formerly superintendent of operations of the Texas Pipe Line Company of Texas, Houston, has been elected vice president and director of the company. This position is an additional office just created in view of the company's recent rapid expansion.

* * *

Following the election of Arthur W. Cutten as a director of the Sinclair Consolidated Oil Corporation, succeeding P. W. Thirtle, Mr. Thirtle, who is comptroller of the company, resigned from the board and was made a vice president.

* * *

Capt. W. J. Ryan has been appointed port captain in New York for the Standard Oil Company of New Jersey, succeeding the late Captain Down. Captain Ryan has previously been stationed at Baton Rouge. Capt. G. S. Spinney has been brought from Corpus Christi as senior assistant, Capt. T. J. Gilroy remaining as junior assistant.

W. J. Morris, vice president of Youngstown Sheet & Tube Company, Youngstown, Ohio, passed through Houston, Tex., the past week on a hurried trip.

* * *

F. H. Wickett, chairman of the board of the American-Maracaibo Oil Company, is in Shreveport, La., for a rest, planning a visit of indefinite length.

* * *

George H. Jaques, general superintendent of the Midwest Refining Company's operations, is on an inspection trip of company properties in Kansas and Oklahoma.

* * *

R. E. Wertz, general manager, and P. C. Spencer, general counsel for the Producers & Refiners Corporation, with headquarters at Independence, Kans., were in Wyoming recently.

* * *

Forrest M. Towl and Allen T. Towl of New York City, president and general manager, respectively, of Southern Group of Pipe Lines, were Pittsburgh, Pa., visitors.

* * *

D. V. Blocker, assistant to C. R. Minor, vice president of the Gulf Refining Company, has returned to Shreveport from a stay of several weeks in Jackson, Ala., and vicinity.

* * *

Henry W. Masters, London, England, director of the Rycade Oil Corporation, has been spending several weeks at the offices of the company in Houston, Tex.

* * *

Wallace E. Pratt, director of the Humble Oil & Refining Company, Houston, Tex., has returned from an extended trip into Mexico as far as Tampico.

* * *

Harold C. Osman, secretary of The Nugent Steel Castings Company, Chicago, and heretofore in charge of sales for that company, has been appointed works manager.

* * *

P. F. Shannon, professor of petroleum engineering at the Colorado School of Mines, has gone to Cartagena, Colombia, with the Tropical Oil Company.

* * *

E. C. McCarnes, San Angelo, Tex., production superintendent of the Transcontinental Oil Company in West Texas, has retured to his headquarters following a trip through New Mexico.

* * *

Carey P. Butcher, West Texas gelogist for the Continental Oil Company, has returned from an extensive field trip through New Mexico and West Texas.

* * *

John Hancock, legal counsellor for the Texas Pacific Coal & Oil Company, has returned to his offices in Fort Worth, Tex., following a business trip to South Texas.

* * *

J. A. Birmingham, assistant to the division manager of The Texas Company in West Texas, has returned to his Fort Worth headquarters following a trip to Montana and Colorado.

* * *

M. L. Johnston, Chicago division retail sales manager for Roxana Petroleum Corporation, has been transferred to the St. Louis headquarters where he is attached to the staff of J. A. Strong, in charge of marketing.

* * *

Peter Q. Nyce of Washington, D. C., was in Casper, Wyo., several days recently. Mr. Nyce at one time lived in Casper as counsel of the Carter Oil Company for the Rocky Mountain region and later in Denver.

* * *

John D. Clark of Baltimore, Md., former president of the Midwest Refining Company, and Mrs. Clark were called to Wyoming by the death of Mrs. Clark's sister, Mrs. Anna B. Haggard of Cheyenne. Mr. Clark is taking a postgraduate course at Johns Hopkins University.

* * *

A. S. Hardin, president of the Southern Crude Oil Purchasing Company, who with other officials returned to Shreveport early in the week from Fort Worth where they made preliminary arrangements for moving the company's general offices to that city, has gone to the New York headquarters of the organization.

Natural Gas Developments

NEW LINES IN ARKANSAS AND NORTH LOUISIANA

SHREVEPORT, La., Nov. 3.—While busy with construction of 100 miles of 10-inch welded line from the Johnson County gas fields near Clarksville to Little Rock, Arkansas Natural Gas Corp. has launched two more projects calling for approximately 200 miles of main line in Arkansas and Louisiana to cost around $1,750,000. The largest of these is a 20-inch welded line from junction with the Caddo-Little Rock main line at Mooringsport, via Cotton Valley, to the Monroe and Richland gas fields, approximately 125 miles, and the other is 56 miles of 12¾-inch welded line from El Dorado to connection with the Caddo-Little Rock line at Trees compressor station at Emmet, Ark. The company also has in prospect a 10-inch or 12-inch lateral line from Trees station to Saratoga, in Little River County, to supply a cement mill to be built there. This program does not contemplate abandonment of the proposed extension of the Richland-Monroe-Camden line from Camden to junction with the Caddo-Little Rock main at Malvern, Ark.

The El Dorado-Emmet line, which traverses the Stephens and Nevada County oil fields, will take gas from the Champagnolle Field, where a total open flow of 497,000,000 feet has been developed from 19 wells, though the total at present is probably around 400,000,000 feet, much of which is already contracted. Eventually the line will be extended into the Monroe and Richland districts, either by tapping or looping the company's existing line from El Dorado and Camden. Survey for this line has been completed from El Dorado to Emmet, the right of way bought and pipe delivered, Spang, Chalfant & Co. supplying the pipe.

Survey for the 20-inch line has been run from Mooringsport to Monroe and right of way is being bought, while bidders are figuring on construction and materials contracts and also on the construction of the El Dorado-Emmet line. Right of way for the Monroe line will, roughly, parallel the Magnolia and Moody-Seagraves lines. No compressor stations are contemplated in the present plans, well pressure being sufficient to deliver gas to the stations where junction with the Caddo-Little Rock main is effected.

UNITED GAS COMPLETES PLANT

The United Gas Service Co. has completed installation of the gas distribution plant at Pomona, Kans., and the construction crew has moved to Melvern, Kans., and will have the distribution plant completed there within a short time. Gas service will be available for Kiowa, Kans., within a week, as the United Gas Service Co. has completed a line from the Empire's 20-inch line to town and is constructing distribution plant in Kiowa. This company already serves Conway Springs, Clearwater and Harper, Kans., and Arnett, Okla., these plants having been installed within the past year. The United Gas Service Co. also holds natural gas franchise for towns of Quenemo and Lyndon, Kans.

MONTERREY LINE RIGHTS

HOUSTON, Tex., Nov. 3.—Rights of way now are being secured from Monterrey, Mexico, north to the gas area east of Laredo for the Houston Gulf Gas Co.'s 14-inch line, which will be used to supply natural gas to the smelters at Monterrey.

PARTIALLY DEPLETED GAS SANDS BENEFITED BY SIMPLE TREATMENT

By H. F. Beardmore
Indian Territory Illuminating Oil Co.

Experiments conducted for the purpose of rejuvenating several gas wells in the Bartlesville sand in Osage County, Oklahoma, have indicated that shooting is desirable as a means of bringing back to profitable operation wells that were partially depleted and approaching abandonment. A simple, safe and inexpensive method of shooting has been developed, and has been used with uniform success on a number of wells. All the wells have

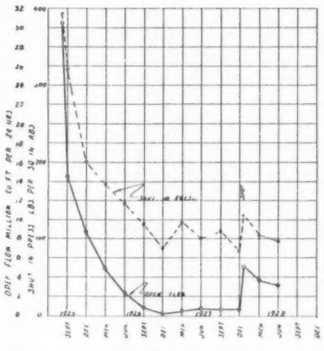


Figure 1—Graph showing decline of a typical gas well and the increase in volume following a shot.

responded to the treatment and have acted so similarly that there is a possibility that the plan can be used to good advantage elsewhere. With this method, gas volumes have been increased in these wells an average of 800 per cent.

The variety of opinions on the methods of shooting, and the effect of the shots made it difficult to determine the proper plan to use when shooting wells. Differences in well conditions generally determine the method to be used. Character of the sand, the kind of well, and the method of completion, are important points. A type plan was developed and has been followed with uniform success.

Information collected when these wells were shot is interesting in that it gives some indication of the nature of the sand in the partially depleted wells. Action of the shot can also be interpreted by specimens blown from the wells. It is to be emphasized that while this plan of shooting is so uniformly a success on these partially depleted wells, it is not advanced as applicable to every condition that affects a gas sand. However, it is hoped that this interpretation may lead to a discovery of similar conditions in other fields.

Profitable Operation Prolonged

An examination of the decline of most gas wells will show that the volume falls off at a much greater rate than the shut-in pressure. At first, this loss in volume only necessitates a longer period for the recovery of the gas, but later in the life of the well a larger volume is essential for continued operation. This disproportionate decline of volume, compared to the shut-in pressure, can be corrected by shooting. The treatment has proved valuable by making possible a continuation of profitable operation in wells which were at the point of abandonment.

A typical decline curve of a gas well is given in Figure 1. Benefits of the shot and the continuation of the increased volume thereafter, are clearly shown.

The wells have been shot with from 5 to 10 quarts of nitroglycerin. Tamping the shots has not been practiced, and the holes were bailed to bottom before shooting. The charges were detonated by a jack squib, and the increased gas, after the explosion, was sufficient to clean the hole of debris from the shot.

The elimination of tamping the shots is a variation from usual practice. It undoubtfully permits a portion of the force of explosion to be wasted up the hole, but since only small shots are necessary, this is not important.

There are many benefits to be derived from not tamping the shot in dry gas wells. There is no driving of water back

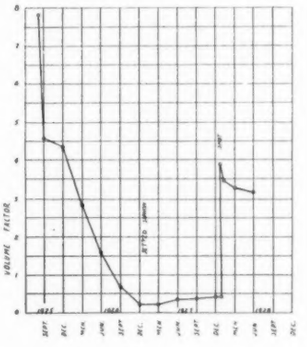


Figure 3—"Volume factor" curve showing benefit to sand from shooting.

into a sand by an excessive fluid head. There is no danger of parting casing by having the fluid flowed up the hole by formation gas at the time of the explosion. The wells can clean themselves after the shot, and stringing up tools is unnecessary. Shots may be placed close to the casing seat without damage. The confining effect on the explosion by tamping is not present, and the force of the shot is distributed throughout the sand.

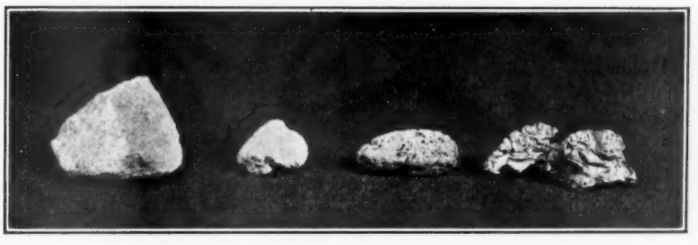


Figure 2—Specimens blown from gas well after shot: "a" and "b" show condition of sand in well, the darker portion being sand face in which pores have been clogged by silt accumulation; "c" and "d" show fusing action of shot on sand.

In shooting, a dry and open hole has been an important factor in the success attained.

The question has arisen how close a shot may be placed to a casing seat without damage to the pipe. Most gas wells are completed with the casing set in the top of the producing sand, and usually do not warrant the expense of pulling pipe when rejuvenation is attempted. In a number of cases, the pipe is cemented or frozen, and cannot be moved. In others the hole would cave badly if the pipe should be raised.

Dry Shooting

The method of dry shooting is well adapted to these circumstances, and a 5-quart shot may be discharged with comparative safety within 10 feet of the bottom of a string of pipe. Ten quarts of nitroglycerin have been used as close as 5 feet to a casing seat without apparent damage, although the pipe was jarred by the explosion.

The size of the shot has made little difference in its action on the sand, the same being true of the location of the shell. Five quarts of nitroglycerin was the smallest amount of explosive used. This was usually placed opposite the depths where the greatest initial volumes had been found when the well was drilled. Results were the same in all cases regardless of the location of the shell, un-

(Continued on Page 96)

MUSKEGON COMPANIES ARE SURVEYING SUPPLY

By Special Correspondent

MUSKEGON, Mich., Nov. 3.—Four companies, including the Grand Rapids Gas Light Co., a subsidiary of the American Light & Traction Co. of New York, are studying the feasibility of piping natural gas from the Muskegon gas and oil field to Grand Rapids, a distance of about 40 miles.

The other three companies are the Shoup Oil & Gas Co., of which C. G. Kuennen of Grand Rapids is president; the Michigan Pipe Line Co., a subsidiary of the Ottawa Oil Corp. of Grand Haven, and the Central Michigan Pipe Line Co., organized at Grand Haven.

The Shoup Oil & Gas Co. has one gasser which came in with a flow gauged at 7,000,000 feet a day. The company owns 31 acres on which this first gasser is located.

The Ottawa Oil Corp. is drilling three wells in the Muskegon Field and owns half interest in leases on more than 200 acres in the proven territory in addition to leases on about 15,000 acres in Ottawa County which have not yet been tested.

The Central Michigan Pipe Line Co. is controlled by C. M. Bowers of Muskegon, C. A. Welsh of Hart, and A. W. Taggart of Big Rapids. They have two completed gassers in the Muskegon Field, each of which came in with an open flow of about 14,000,000 feet a day.

Independent investigations and estimates are being taken by engineers for each of these four interests to determine if a pipe line to Grand Rapids is warranted.

MEMPHIS CO. CONTRACTS

The Memphis Natural Gas Co., which is constructing a 210-mile pipe line to transport natural gas from the Monroe gas field of Louisiana to Memphis, announces the closing of a contract with Louisiana Power & Light Co. to supply that company with any natural gas it may distribute in cities and towns along the pipe line right of way in Louisiana. This contract is similar to the contracts Memphis Natural Gas Co. has made with Missouri Power & Light Co. and Arkansas Power & Light Co.

Field Problems and Their Solution

EDITED BY THOMAS F. SMILEY

In order that men connected with the drilling, producing and transporting branches of the petroleum industry may procure quickly a solution of many problems confronting them from time to time in their work, The Oil and Gas Journal has arranged with leading engineers and other recognized authorities to answer questions submitted by readers of this publication pertaining to the work of drilling and producing crude oil and transporting this product.

Everyone is invited to submit questions freely. These questions will be submitted to proper authorities by Mr. Smiley, who edits the page, and answers, based on the best available information, will be published. Each question should give as much detail as possible, especially where it relates to matters where depths of sands, types of sands and operations on adjoining properties would have a bearing on the problem involved. The source of all questions will be considered as confidential and only initials will be published in connection with the question.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or practices which are improvements.

In case an immediate answer is important, one will be given by mail if the writer requests it.

STATIC EQUILIBRIUM DEFINED

In a recent issue of your magazine in giving directions for shutting off bottom water you said, "The procedure in an ordinary bottom hole cementing job in which a dump bailer is used is first to allow the water to rise in the hole until it assumes static equilibrium." I wish you would explain the meaning of the words "static equilibrium."—R. G. A.

The word "static" means at rest or causing to stand. The word "equilibrium" means a state of balance between opposing forces or actions; either static as in the case of a body acted on by forces whose resultant is zero, or dynamic as in reversible chemical reaction.

In the case that you ask about, the pressure exerted by the column of fluid standing in the hole exactly balances the formation pressure and consequently there is no fluid movement. The fluid in the hole is then said to be in static equilibrium. This is desirable in order to avoid any agitation of the cement while it is setting.

PREPARING A THESIS

I am an undergraduate student preparing a thesis and am very anxious to secure a brief yet complete outline upon the following subjects:

1. Various general methods of drilling for petroleum.

2. The importance of paleontology in the location of petroleum.

3. A concise article on the general methods of refining.

4. The development of synthetic petroleum in Germany or this country—J. H. T.

What you need is a brief general bibliography upon petroleum. This department is sending you such a bibliography by mail. Some of the books and papers to which you refer are checked for your attention. If these books and papers cannot be found in the University library it is suggested that you use one of the large public libraries that are located close to you, or that you visit the library of one of the technical schools specializing in petroleum engineering and petroleum geology. You will do well to refer to the bulletins of the American Association of Petroleum Geologists for papers upon the application of paleontology in the location of petroliferous areas. You should also communicate with the United States Geological Survey and the United States Bureau of Mines for further information upon the subjects in which you are interested.

SHOULD SHUT OFF THE WATER

We are interested in a company that owns one of the most valuable leases in the new Liberty Township Field in Seneca County, Ohio, and now have nine wells completed and pumping on an 80-acre lease and are finishing our tenth. We have had some very wonderful production from this lease, there being several of the wells that flowed naturally before and after being shot. We are getting our pay in the Trenton Rock formation, striking the sand at about an average depth of 1,325 feet and drilling from 100 to 150 feet in the sand.

Recently one of our adjacent lease holders drilled into a salt water crevice and since that time we have been having considerable water trouble. This makes it very expensive for us to operate in order to get our production and we have been wondering if we could not use either the gas lift or air lift method of operation and we would like to make inquiry as to whom we could get in touch with to get the correct information in order to try this method out.—A. F. S.

The best way to combat the water trouble that you outline is to shut off the water in the offending well or wells. You will otherwise have a long and expensive fight in which the water will eventually drown out your wells unless you can shut it off at its source. We believe that it will pay you to co-operate with your neighbors in both the work and the expense of doing this.

You should first determine with as much certainty as possible where and how this water is entering the productive formation. If it is water that occurs naturally in the oil-bearing formation, such as edgewater, you have no alternative but to try to hold it back from your wells. If it is either top or bottom water leaking into and flooding the formation, you should make every effort to shut it off.

In the absence of enough details to advise you definitely upon the water shut off methods to follow, it is suggested that you refer to the following bulletins of the United States Bureau of Mines, which give very complete instructions as to how to shut off water from oil wells:

"Methods of Shutting Off Water in Oil and Gas Wells," by F. B. Tough, Bureau of Mines Bulletin 163, 1918.

"Manual for Oil and Gas Operation," by T. E. Swigart and C. E. Beecher, Bureau of Mines Bulletin 232, 1923.

You can obtain copies of these from the superintendent of documents, Government Printing Office, Washington, D. C., at only nominal cost.

If your problem is to shut off bottom water, it is suggested that you use the dump bailer method of bottom hole cementing unless you already have the pumps and other equipment necessary for the tubing method.

In regard to the use of the air-gas lift method on your properties, you are advised that the possibility of using this method successfully depends largely upon what formation pressure remains in the productive stratum, as well as upon the volume of fluid that is available to be lifted. You must have sufficient submergence. Without this, you cannot operate by air or gas lift. You are referred to a paper on "Fundamental Principles of Flowing Wells," by T. A. Hall, on page 30 of The Oil and Gas Journal for October 4, 1928.

You would do well to obtain a copy of the handbook entitled "Oil Well Blowing Handbook," by S. F. Shaw, which has been published for free distribution by the Ingersoll-Rand Co., 11 Broadway, New York.

For further information upon the possibility of using the air or gas lift method on your property you should consult an engineer who has had experience in this work.

For information upon methods of water control you are referred to a paper entitled "Water Control Problems Analyzed," in The Oil and Gas Journal of September 30, 1928, and to other papers upon water control which are to be published in this periodical in the near future.

QUICK-SETTING CEMENT

Would it not be for the best interests of an oil well driller to have a compound to mix in portland cement for quick sealing of casement, a compound which would make the portland cement set quick in about 30 minutes? Would that be an advantage to the driller? Please let me know if such a cement compound would be appreciated by the oil well drillers?—J. D.

There are now in extensive use in the oil industry numerous quick-set compounds which are added to portland cement to hasten its set. Most of these are essentially calcium chloride. They shorten the time required for the average oil well cementing job by several days but they do not set the cement in 30 minutes. It would be most undesirable to set the cement so quickly in oil well work because it generally takes more time than that to run the cement into place after it has been mixed. It is possible to shorten the setting time of cement all the way to an almost instantaneous or flash set with reagents such as sodium silicate and magnesium chloride, but these very quick sets are not desirable because they do not allow time enough for the cement to be run properly into place in an oil well.

POSSIBLE BUT NOT PROBABLE

Do you think it would be possible for an emulsion to form in an oil sand before the fluid reaches the shot cavity in a well?

Would you introduce soap into a pressure well?—O. D. R.

The velocity of the fluid movements through an oil sand increases as the fluids approach a well. It is possible that under conditions of turbulent flow some emulsion may form in the sand around the well. It is much more probable, however, that most of the emulsion forms in the producing wells themselves. Faulty pumping equipment is a very common cause of the formation of emulsions. Agitations of oil and water by air bubbling through the fluid is another cause of the formation of emulsions in the wells on repressured properties.

It is probable that most of the fluid in a pressure well is forced into the formations and held there by the pressure imposed upon a pressure well. Thus there would be little if any advantage in introducing soap into a pressure well. Some favorable results have been obtained by introducing soap into the pumping wells on repressured properties, but there are patent restrictions upon this method which may lead to serious legal complications.

LEAKAGE BETWEEN CASING STRINGS

Why do we so frequently have oil leaking up between our 6-inch and 8-inch casing in the Little River Field, when other companies do not have this trouble? We set our 6-inch casing 15 feet in the Viola lime. We get oil coming up between the 6-inch and 8-inch and have to Bradenhead to save it. What should we do to make our 6-inch casing hold tight?—S. E. T.

Information obtained with a view of helping you indicates that your trouble is rather general among companies operating in the Little River Field, but they are not saying much about it.

The trouble is evidently caused by failure to make a tight seat in the lime, one contributing cause probably being the porous character of the lime at the casing point. The best way to prevent this leakage is to use heavy rotary mud, leaving a column of this mud standing between the 6-inch and 8-inch strings when the wells are completed.

MIGHT CAUSE EXPLOSIONS

In a field where there is considerable hydrogen sulphide gas with the oil, some of the muck cleaned off of tubing that was being pulled became hot as it dried on the ground and some of it caught fire by itself. Can you explain this? Would this not be a possible explanation for some of the tank explosions in West Texas where high sulphur oils are being produced?—L. E. A.

Sulphide products of corrosion that form where there is insufficient oxygen to satisfy their affinity for oxygen tends to unite with oxygen at their first opportunity. The heat of reaction (oxidation) is some times sufficient to ignite the sulphides. The occurrence that you describe has been reported from several fields where hydrogen sulphide gas accompanies the oil. Your suggestion that this phenomenon may be responsible for some of the explosions of tanks that are emptied for inspection cleaning, and repairs is worthy of investigation.

WANTS SAND CORED

I am about to drill a new well on a property that is being repressured with air. What will it cost me to have the sand cored with a cable tool core drill? The depth of the sand is 850 feet and it varies from 20 to 40 feet in thickness. We would drill a 6-inch hole to the top of the sand and then turn the well over to the core driller.—R. W. C.

This department is unable to name any concern that would take this core for you, but it is publishing your question so that anyone who is in a position to do this work for you may communicate with you through this office.

FLAME ARRESTOR COMMENDED

We noticed on your page recently a question by F. N. M. regarding the dangers of gas-air mixtures when putting a vacuum on wells and in using gas from air repressured sand for engines. You might be interested to know that the flame arrestor, which is so widely used for protecting tanks containing explosive air vapor mixtures, is also being used to prevent flashbacks in lines carrying such mixtures as F. N. M. mentions. Many operators when burning dangerous air vapor mixtures place a flame arrestor just back of the burner to prevent flame shooting back through the line.—H. H. F.

Parkersburg

HAS SERVED THE OIL FIELDS OF THE WORLD FOR THIRTY-ONE YEARS

Eclipse Pitmans

THE Parkersburg Eclipse Pitmans are the only ones on the market with self-aligning bearing boxes, which permit them to align themselves with the weaving motion of the walking beam.

The heavier Parkersburg Drilling Eclipse Pitman, recently designed and now available, is made from the same H-Beam as that of the pumping pitman, but is heavily reenforced at the wrist pin end.

Unlike the pumping pitman, the bearing box in the drilling pitman will not drop out when released from the wrist pin.

For complete information on these pitmans, write for Section "E" - Catalog 26.

The PARKERSBURG RIG & REEL COMPANY

Executive Offices & Main Plant, Parkersburg, W. Va., U. S. A.

Sales Offices Maintained and Stocks Carried in Every Producing Field

Parkersburg Products

Steel Derricks & Steel Crown Blocks	■	Rig Irons (A.P.I. Standard)	■
Chain Driven Sand Reels & Bailing Reels	■	Portable Drilling Machines (Wood & All-Steel)	■
Steel Wheels	■	Bolted Steel Tanks	■
All-Steel Standard Rigs	■	Miscellaneous Drilling Equipment	■

Check the equipment in which you are interested, tear out and return this page, with your name and address, to us, and we will send you complete information on the items checked.

GILBERT & BARKER
Pipe Sealing Compound
FOR GASOLINE AND OIL PIPING
DIRECTIONS
Be sure threads are perfect and wiped clean. Apply compound to male threads only and make joint up tight. If compound becomes too thick it may be thinned by adding a little shellac. Use compound only for gasoline and oil piping, never on water steam or similar piping.
GILBERT & BARKER MFG. CO.
Springfield, Massachusetts, U.S.A.

See that pipe threads are thoroughly clean. Apply G & B Pipe Sealing Compound to male threads only. Then make joints up tight. Pipe joints properly made up in this manner will stay tight indefinitely.

Permanently Tight Joints

G & B Pipe Sealing Compound withstands gasoline and oil

Neither gasoline nor oil has any effect on G & B Pipe Sealing Compound. Pipe joints *made tight* with it *stay tight.* The pipe line then is truly all one piece.

This Compound won't let small leaks start—so large leaks can't occur. Pipe joints properly made up with G & B Pipe Sealing Compound are leak-proof ever after. Specify it in all installations of gasoline or oil pumps and tanks.

G & B Pipe Sealing Compound is packaged in these sizes: ⅛ pint can for the tool kit is 15c; pint can for general shop use is 75c; and the quart can for supply is $1.45.

GILBERT AND BARKER
MANUFACTURING COMPANY
PUMPS AND TANKS FOR THE OIL TRADE
SPRINGFIELD MASS.

Visible Gasoline Pumps, mechanical measure or sight measure, hand or air operated, equipped with the famous NULTRA *bowls. Also piston type pumps with visible discharge. Pump and tank outfits for motor oils, including the popular* "NARRO-LUBE" *type. Special pipe sealing compound for gasoline and oil pump and tank installations.*

KENTUCKY-TENNESSEE

(Continued from Page 64)

fields as well as the Mid-Continent, and a former resident of Bowling Green, Ohio, is reported able to be up and around after several months of sickness. It will please his many friends that he is once more able to walk, and expects to soon get back into the harness. The last development work he made was with his son when they drilled seven producing wells on the Meador 200 acres, 13 miles west of Scottsville on the Upper Franklin Pike, in Allen County, the oil being found in the Corniferous Lime of which there was from 20 to 30 feet, and three of the seven wells started at around 60 bbls. This is in a shallow area where only about 60 feet of casing is required and the holes around 370 feet deep. As soon as he is able to come east, he will start a well on the south 100 acres of the farm. This oil was brownish and 42 gravity. The wells are not far from Mount Aerial and Trammel.

Field Pickups

The territory around Fordsville in Ohio County, is attracting attention. The Wiser Oil Co. is drilling a well on the Mose Wells farm, north of Fordsville. M. B. French and others are drilling on the Scott Huss. French and Thompson are drilling on the Ben R. Baize, and W. C. McBride, Inc., started a test on the Gaines farm, same field.

Chester Oil Co. is drilling a test on the Clay Ford farm, south of the Whittaker Pool and north of the Ambrose Pool, in Ohio County. Should this prove a producer it will open up a wide area for development work. The contract work is being done by Dug T. Bolling.

Huff and Calderwood are starting a test on the J. P. Salmon farm, south of the Jones Pool, in Daviess County, and southwest of Whitesville.

The Imperial Oil & Gas Co. struck a stray sand with a showing of oil at a depth of 668 feet in a test on the J. K. Triplet farm, near Niagara, in Henderson County. This is the second well drilled near Niagara, and the same stray streak was found on the J. E. Knight, some months ago. The Imperial well is being drilled by Contractors Clark and Bovard of Celina, Tenn.

CENTRAL WEST FIELDS

(Continued from Page 64)

Jr., did the same with Nos. 2 and 3 on the Dan Bressler, Section 26, and the Ohio Oil Co. pulled old Nos. 1 and 4 on the Leroy Douglas, Section 27. B. L. Carman and others are drilling No. 3 Martha J. Powell, Section 12, and Neely & Nolden are drilling No. 1 Bassett-Marshall farm, Section 13. In Marion Township, William Lang abandoned No. 17 Good & Tucker, Section 11, and the Ohio Oil Co. pulled Nos. 1 and 4 J. P. Barnt, Section 12, and Nos. 1 and 6 on the Isaiah East, Section 13. In Sugar Creek Township, James M. Jacobs abandoned No. 2 on the Tailor-Ridenour farm, Section 1.

Auglaize County

In Auglaize County, Washington Township, the Brookside Oil & Gas Co.'s test in the southeast corner of the H. M. Neemeyer, in the northwest quarter of Section 29, produced an initial of 25 bbls. from a total depth of 1,224 feet, or 29 feet in the sand. In Wayne Township, Arthur & Simpson drilled a dry hole in a test in the southwest corner of the R. R. Botkins, sand was topped at 1,448 feet and drilled 220 feet in the sand to a total depth of 1,668 feet. This test was near the northeast corner of the county and purely wildcat. In Moulton Township, Stelzer and Boyd's second test on the John Butcher, in the southwest quarter of Section 10, pumped but 2 bbls. from a depth of 1,225 feet, or 45 feet in the sand. Ohio Oil Co. abandoned No. 5 Pat McLaughlin, Section 17, and No. 2 R. B. Cullison, Section 16.

In Sandusky County, Jackson Township, Elma J. Smith pulled out old No. 1 on her own farm, Section 19, Jackson Township. The Union National Bank of Fostoria abandoned No. 10 on the Jacob Bowe, Section 16, Scott Township, same county.

In Mercer County, Gibson Township, J. H. Wilson and others' No. 8, in the northwest corner of the Henry Lechner, Section 18, pumped 10 bbls. from a total depth of 1,191 feet or 50 feet in the sand which was topped at the shallow depth of 1,141 feet. Joe Brunswick and others abandoned No. 1 on the Joe Brunswick, Section 24, Recovery Township.

In Van Wert County, Jennings Township, D. S. Bassett abandoned No. 1 on the Martha Davis, Section 31, and is starting No. 12 same farm.

Central Ohio

The Central Ohio and adjoining nearby areas enjoyed another active week of development, there being 26 completions reported, 8 dry holes, 14 gas wells and 4 producers with an initial production of 88 bbls. Since the last review 29 new locations for wells have been staked out and 28 new wells have started spudding or drilling. This shows that it is the most active area in the Central West Field at present. The gas companies are speeding up new work in hopes of developing new producing gas pools, as the winter is close at hand when there will be a heavy pull on the gas sands. Many wells were of the test order and while no very large producers were uncovered, the smaller ones help along materially owing to their great number.

In Ashland County, Vermillion Township, W. E. Hawk and others have an average gas producer in a second test on the Luther Jones, Section 24. In Orange Township, the Logan Gas Co. staked locations for tests on the Nettie McFadden, Section 2, and also on the Fred E. Keener, Section 18. Ohio Fuel Gas Co. started drilling No. 1-3,294 on the Amos Weisman, Section 1. In Perry Township, Albert Kabe's No. 3 on the Edward Barnhart, Section 29, is credited with an oil production of 8 bbls. from the Berea sand. Curtis and others are drilling No. 4 on the Eliza Devault, Section 20.

In Medina County, Montville Township, the Ohio Fuel Gas Co.'s No. 1-3,249 on the Harry Emmerson, Lot 66, is a dry hole. Same company made a location for a test on the L. A. Quayle, Lot 83. In Lafayette Township, the Logan Gas Co. made a location for a test on the A. J. House, Section 6, also for No. 5 on the Medina County Infirmary land, Section 2, as well as started drilling No. 1-3,034, on the Clara Simpson, Section 16.

In Wayne County, Congress Township, the Ohio Fuel Gas Co. has a fair gas well in No. 1-3,261 on the Mary E. Shilling, Section 8, and drilling No. 2-3,330 on the George B. Faber, Section 7. Same company staked locations for No. 1 L. H. Fulton, Section 13; No. 1 Eliza Somerside, Section 6, and for No. 2 Lillian B. Wood, Section 7, same township. In Chester Township, same company brought in a nice gas producer in No. 1-3,278 on the John I. Gable, Section 8. Same company drilled a dry hole in No. 1-1,258 on the B. E. Boreman, Section 6, Wayne Township, which had no showing worth while when cleaned out. In Green Township, the Logan Gas Co.'s No. 1-3,030 on the Eliza Baab, Section 13, was a duster.

In Holmes County, Richland Township, the East Ohio Gas Co. got an exceptionally good gas well at a test on the George O. Ledbetter, Section 14.

Richland County

In Richland County, Worthington Township, the Ohio Fuel Gas Co. made a location for a test on the John M. Hay, Section 24.

In Knox County, Jackson Township, the Logan Gas Co.'s No. 1-3,015 on the A. J. Beatty, Section 1, completed a short time ago, with an initial production of 114 bbls. is reported still to be producing 75 bbls. daily, making it a remarkable well. The oil in this well was found at from 3,067 to 3,120 feet. Upham Gas Co. is drilling a test on the S. G. Dowds, in Monroe Township, same county.

In Coshocton County, Tiverton Township, Bell Brothers have a very light gas well in a test on the Chester Blume,

(Continued on Page 93)

ROCKY MOUNTAIN AREA

(Continued from Page 56)

fining Co., Thomas McLaughlin and associates of Spokane, Wash., and the Joe Miller Drilling Co., being the other interests. The importance of this test lies in its location south of the major east-west fault in the Iles Dome area and between the Iles and Thornburg (or Morapos) domes. The Thornburg Dome has some large wells in the Dakota, but the only test drilling to the Sundance encountered water. The test will be drilled on the theory that oil may have been trapped in the fault blocks.

Another important test is being started on the Moffat Dome by the Texas Production Co. in its No. 11 Knowlton, one location east of No. 10 Knowlton, the discovery well in the Morrison and Sundance sands on that structure and 320 feet north of the south line and 220 feet west of the east line of Section 33-5n-91. No. 10 Knowlton is the only well on the structure to reach the deeper horizons. The Texas company's No. 5 Walter Wick, Section 10-4-91, a producer in the shale, is being drilled down, but has been delayed at 4,596 feet with a fishing job. At present it is swedging the 6¼-inch casing at 3,925 feet. The new test will be drilled with a rotary.

On the Iles Dome, operations have slowed up considerably with the Texas Production Co. drilling one well and the Midwest having two under way. The Texas company's No. 36 Lloyd, SE cor., Section 21-4n-92, is bottomed at 503 feet and straightreaming at 500 feet. The Midwest's No. 24-D Parkinson, SE NW, Section 22-4-92, is drilling at 1,670 feet in brown shale, and its No. 3-SD Shaw, NE NE, Section 27-4-92, is bottomed at 3,067 feet and fishing for the 8¼-inch bit. The only other active operation on this dome is W. F. McCormick and others' No. 1 Sales, SE SE, Section 28-4-92, which is bottomed at 2,490 feet and trying to straighten a crooked hole.

In Lincoln County, in eastern Colorado, the Kelly Oil Co.'s No. 1 State, Section 36-14-57, is reported shut down at 1,417 feet temporarily. This wildcat was reported two weeks ago to have a good show of oil in shale just above what was believed to be a caprock over the Dakota at 1,350 feet.

In Rio Blanco County, the only active operation is the White Eagle Oil & Refining Co.'s No. 1 Fordham, Section 9-2s-96, on the Piceance Creek structure, which is drilling below 565 feet after setting the 15½-inch at 220 feet.

In Huerfano County, the Parker Club, Inc.'s No. 1 fee, Section 4-28-68, on the Badito-Alamo structure, being drilled jointly by the Kinney-Coastal Oil Co., has been delayed at 1,210 feet by water shortage. Heavy snow and rain within the past few days is expected to relieve the difficulty.

In Bent County, the Marland Production Co.'s No. 1 Pipe Springs, Section 27-27-49, is drilling at 3,897 feet in light sandy shale in the Pennsylvanian formation.

The Producers & Refiners Corp.'s No. 1 Hendershot, Section 2-6n-86, on the Pole Mountain anticline in Jackson County, is having some trouble with casing at 1,835 feet. The 12½-inch collar pulled off and the casing dropped 9 feet. The tools, however, will go through to the bottom and it is not expected to be a bad job.

In Routt County, the Texas Production Co.'s No. 1 State-Oliver, Section 18-6-86, on the Tow Creek Dome, is drilling at 2,715 feet, and its No. 4 Belle Dennis, Section 7-6-86, the rotary test to the Sundance, is drilling at 3,947 feet. Same company's No. 5 Henry Dennis, Section 17-6-86, is drilling at 940 feet.

Wyoming

Efforts of operators in the Oregon Basin Field in Park County to reach an agreement upon some plan to limit drilling and prorate pipe line runs have progressed to the point where a committee has been appointed to formulate details for a working agreement. This committee is composed of M. J. Foley, of the Continental Oil Co., chairman and supervisor; R. E. Wertz, of the Producers & Refiners Corp.; F. W. Freeman, of the Texas Production Co.; Charles E. Orchard, independent operator; and John McFadyen, of the Ohio Oil Co. A. Baker was chosen secretary of the committee. A questionnaire has been forwarded to all operators requesting specific data on the number of producing wells, production, offset requirements, market commitments, and other data necessary to form a basis for an agreement. Mr. Foley was in charge of a similar committee that worked out a plan for the Salt Creek Field several years ago. It is understood that all the operators in the field are co-operating in the movement with one exception.

One of the best wells in Salt Creek in some time is being completed on the Mountain Producers Corp.'s lease in its No. 16-D, NW NW, Section 35-40-79. This well was started last March with the Sundance sand as the probable objective and lower horizons which have never been tested in Salt Creek as a possible objective. A rotary outfit was installed with the purpose in view of testing that type of drill for deep sand wells in the field, but it did not prove satisfactory, and a change over to cable tools was made. The well reached the Sundance sand the past week and is reported to have flowed 5,000 bbls. in 30 hours. There has been no definite decision concerning the drilling of a deep test below the Sundance in as much as there is no immediate need to increase production and the ground affords the best storage. The Wyoming Associated Oil Co.'s No. 16-D, SW Section 23-40-79, was completed at 2,855-2,920 feet in the Sundance with a production of 88 bbls. The Wyoming Oil Fields Co.'s No. 21-L, SE Section 26-40-79, was completed in the Lakota at 2,427 feet with an initial production of 60 bbls.

Little Drilling in Salt Creek

Drilling in Salt Creek at this time is limited to not more than six to eight wells, some of which comprise the deepening of Lakota shale wells to the sand. These wells encountered production in the shale above the sand and stopped until the shale oil was exhausted before being completed. Drilling is confined to the so-called Midwest group. At last reports there were 2,126 completed wells in the field of which 1,493 belonged to the Midwest interests. Of these, approximately 90 were Lakota sand wells. The field is producing around 40,000 bbls. per day, of which 28,000 to 30,000 bbls. is taken from the Frontier (Wall Creek) sands and 10,000 to 12,000 bbls. from the Lakota sand wells. However, most of the Lakota sand wells are shut in, and only around an even dozen, these being edge wells, are being produced. No full test of the Lakota sand wells, in which all were on production at capacity at the same time, has been made, but on the basis of 24-hour tests, it is estimated that the Lakota sand wells already drilled have a capacity of 75,000 to 90,000 bbls. per day. It is understood that the drilling program for the coming year does not contemplate any development in the Wall Creek sands, but the deepening of Lakota shale wells to the sand, and Lakota sand wells to the Sundance. The Casper refineries of the Standard and Midwest companies are at present running 35,000 bbls. per day, the same as for some time. There is no large quantity of gasoline in storage and present indications are that the runs will continue at this figure during the winter in anticipation of next summer's demand.

Drilling operations in Wyoming were slowed up during the week on account of unfavorable weather and several of the wildcats already are shut down for the winter. In Niobrara County, the Buck Creek Oil Co.'s No. 1 Hattie Peterson, Section 30-37-62, is bottomed at 4,257 feet and will stand until spring. This company has gone back into its No. 1 Schuricht, SW NW, Section 5-35-65, Lance Creek Field, and will drill deeper. It is drilling at 2,920 feet. It stopped last January at 2,880 feet where it was temporarily completed with an initial production of better than 100 bbls.

In Fremont County, the Texas Production Co.'s No. 1, Section 1-33-95, Alkali Butte Dome, is temporarily shut in until more cement can be poured into the hole. It was plugged back from 4,240 feet to 4,175 feet and a small quantity of cement was put into the hole until a test could be made. It will be completed at this depth and another well probably will be spotted shortly.

In the Oregon Basin Field in Park County, there are only a few wells drilling. The Wisconsin Holding Co.'s No. 2 Rousch, Section 9-51-100, is running the 12½-inch at 1,508 feet, and the Lenco Petroleum Co.'s No. 1 Llye, SE cor., Section 24-51-101, is shut down at 4,486 feet. The Cody Petroleum Co.'s No. 5 Klindt, NE cor., Section 7-51-100, is drilling at 3,447 feet, and its No. 6 Klindt, NE NE of the same section is drilling at 1,815 feet. The same company's No. 1 Garner, SW cor. NE, Section 27-51-101, is drilling at 2,600 feet. The Big Horn Petroleum Co.'s No. 1 Hoodoo, SE SE, Section 36-51-101, is drilling at 4,025 feet. The Ohio Oil Co.'s No. 1 Sonners, Account 3, SE Section 8-51-100, is rigging up, and its No. 6 Sonners, NW cor., Section 8-51-100, is drilling at 4,524 feet close to the top of the Tensleep. Outside of Oregon Basin, the Ohio Oil Co.'s No. 1 Pulley, Section 27-52-101, on the Shoshone anticline, has not yet drilled in after cementing the 4½-inch at 4,752 feet. Water is being bailed to test the cement and drilling in probably will take place within the next few days. It had 2,000 feet of oil in the hole before cementing in the top of the Embar. The Producers & Refiners Corp.'s No. 1, Section 7-57-97, Sage Creek Dome, is drilling at 350 feet with a hole full of water, and the Oregon-Wyoming Oil & Gas Co.'s No. 1, Section 30-52-101, Horse Center, is drilling at 805 feet.

Matthew Foreman, of Detroit, is reported to have taken over the Fairway Oil Co.'s operation on SW NE, Section 7-47-82, on the Crazy Woman Creek structure in Johnson County, and will install a rotary and drill to 3,200 feet if necessary. This well has been idle for some time. It had a show of oil in the first Wall Creek at 1,920 feet and was drilled to 2,385 feet before shutting down. It will be deepened to the Dakota.

In Carbon County, the Producers & Refiners Corp.'s No. 7, Section 7-26-89, on the Wertz Dome, is bottomed at 3,440 feet in dark sandy shale and underreaming at 3,430 feet, and its No. 8, NE cor. NW, Section 7-26-89, is fishing for the top half of the core barrel at a total depth of 3,718 feet. The same company's test in Section 14-25-89, on the Sherrard Dome, is running the 10-inch at a total depth of 2,091 feet. A flow of 10,000,000 feet of gas was bradenheaded at this depth.

Large Deal Reported

The Ohio Oil Co. is reported to have made a deal whereby it has taken over the holdings of the Somir Petroleum Co. on the Hiawatha Dome, on the boundary between Sweetwater County and Moffat County, Colorado. The consideration is said to have been $320,000, with the company retaining a royalty interest. The Somir company, before being incorporated, drilled in a big gas well on the Colorado side, and now has a well standing at around 1,300 feet in the SE cor., Section 13-12-100, in Sweetwater County. W. A. Meyer, who has been in charge for the Somir interests, is in Wyoming and the deal has not been confirmed, but it is known that dickering has been in progress. It will give the Ohio company control of most of the acreage on the structure as recently it purchased the holdings of the Custer Petroleum Co., and acquired a majority interest in the holdings of the Reiter-Foster Oil Co. The Ohio's No. 1 Humphreys, Section 2-12-100, on the Canon Creek Dome, control of which was acquired from the Reiter-Foster people, is drilling at 550 feet. The same company's No. 2 Posten, NW NW, Section 22-16-104, south central Baxter Basin, is standing cemented in the top of the Dakota at 2,785 feet. The Producers & Refiners Corp.'s No. 1, Section 26-20-104, North Baxter Basin, joint with the Marland Production Co., had 20 bbls. of water at 3,452 feet and was drilled to 3,473 feet. The 6¼-inch is being pulled back to the gas horizon for a test. This well had considerable gas in the Frontier at around 2,350 feet, estimated at 10,000,000 feet, and found the upper Dakota at 3,417 feet, it containing some gas and considerable water. It had more gas at 3,418-20 feet under a lime break, and probably 10,000,000 feet at 3,440 feet in the Lakota, followed by water. This well is located 3 miles to the north of the test drilled several years ago which showed a heavy flow of gas of a different quality from that found in other parts of the field still farther to the south. The Prairie Oil & Gas Co.'s No. 1 Tucker, Section 18-13-99, on the Alkali Butte Dome, is shut down at 2,078 feet on account of snow storm.

In Sublet County, W. D. Newlon's No. 1, SW Section 12-26-113, southeast of production in the south pool of the La Barge Field, probably will be abandoned. It is bottomed below 2,000 feet and had considerable water in sands at around 1,800 and 1,875 feet. The Wyoming Producers Oil Co., SW Section 30-28-113, midway between the La Barge and Dry Piney Fields, also has a large quantity of water at 2,153 feet and probably will be abandoned. The Ogden-La Barge Oil Co.'s No. 1, Section 18-27-113, is drilling below 4,600 feet and does not look very encouraging. It is one of the deepest tests in that area and is located to the northeast of the La Barge Field. The California Co.'s No. 1 Wyss, Section 12-32-115, South Cottonwood structure, is drilling at 1,004 feet in variegated shales, and the same company's No. 1 Bushell, Section 11-29-115, Snyder Basin, is drilling at 1,986 feet in dark limey shale.

In Uinta County, the California Co.'s No. 1 Union Pacific, Section 7-17-116, is fishing for casing. Depth at last report was 1,843 feet.

In Lincoln County, Reeves Aylmore's No. 1, NE NW, Section 7-21-119, Sage Dome, is drilling at 400 feet. The objectives are the Bear River sands at 1,200 to 1,500 feet. The Fontenelle Oil Co.'s test on Section 1-24-113, Fontenelle Dome, set the 6¼-inch at 1,085 feet and is drilling ahead. The Midwest Refining Co.'s Waterfall test in Section 35-22-115, is drilling in hard shale at 1,625 feet.

Montana

The week in the Sunburst Field saw the completion of another large gas well for the supply of the Great Falls line. This well completed by the Sunburst Oil & Refining Co. is estimated good for 9,300,000 feet and was drilled on the Atkinson lease on Section 1-32-2. It is the thirteenth producer of gas drilled by this company.

The Ohio Oil Co. brought in another gasser on Section 31-33-1 on the Berg lease, this well making around 1,500,000 feet daily. The Dakota Dubuque Oil Co. on the Zimmerman lease, Section 29-34-2, found an oil production in the Ellis sand that will make a well good for 30 bbls. On Section 13-34-2, the Campbell Oil Co.'s No. 1 on the Morton lease is a small producer in the Ellis sand and is good for about 15 bbls.

The well of the Peerless Development Co. on the Steele lease that is an offset to the big Hibbing and Sunburst well that opened a new pool on Section 1-34-2, reached the Ellis sand Wednesday and found it dry, the hole was drilled through the sand to a depth of 1,437 feet and although this well is only a location away from the Hibbing Sunburst gusher, there was no oil in the hole.

Pondera Field

In the Pondera Field, the Burke & Rice interests completed a new producer on Section 15-27-4 that will make 75 bbls. when it settles down. On the adjoining Section 16-27-4, W. S. Hawley and others completed a new well that looks good for 100 bbls.

On Section 27-27-4, Hill & O'Neil found a duster and drilled through the sand without finding anything but sulphur water. It seems that this Pondera Field is going to be similar to Sunburst in that a showing of sulphur water generally denotes a dry hole.

The Midwest Refining Co. has sold its Hepp lease in the Lake Basin Field

Now you can get / everything from in BRIDGEPORT ROTARY and CABLE Drilling and Fishing Tools

FAST as conditions have changed in the oil fields, Bridgeport has more than kept pace, both in its line of equipment and tools, and in the service necessary to meet these changing conditions.

Both rental and sale service from Bridgeport is complete—and deliveries instantaneous.

No matter what tool you need—no matter whether you want to buy or rent—the quickest way to get it laid down where you need it, is to phone the nearest Bridgeport Branch Store, or Bridgeport Distributor. Try it—just once—and convince yourself.

In addition to the products of our own manufacture, we are distributors for

LUCEY ROTARY EQUIPMENT—WILLIAMSPORT WIRE —HUGHES ROCK BITS AND CONES—SPANG WELDLESS JARS—PITTSBURGH SEAMLESS CASING AND DRILL PIPE—SOUTH CHESTER LAPWELD CASING

as well as many other well-known products.

Don't forget either, that in Bridgeport's line of Hychrome tools, we can give you a tool that by every known test will stand up under harder service, and give less trouble, than any other similar tool on the market today.

We have just published new books on both our NEW TYPE SWAN UNDERREAMER, and our line of Hychrome Tools. Your copies are waiting for you. Write for them today.

The BRIDGEPORT MACHINE COMPANY

General Offices and Works, Wichita, Kans.

Branches and Selling Agents Throughout the Oil Fields

Central Montana, to the Burke & Rice interests. This lease was one of the first developments in Lake Basin and is producing about 200 bbls. daily.

ROCKY MOUNTAIN PRODUCTION
Runs From Field Week Ended November 3

WYOMING	
Salt Creek	36,920
Big Muddy	2,660
Grass Creek	2,360
Elk Basin	970
Ferris	60
Rock River	2,590
Lance Creek	370
La Barge	2,360
Poison Spider	860
Oregon Basin	5,490
Usage	440
Mule Creek	509
Lander	540
Byron	30
Lost Soldier	3,820
Simpson Ridge	70
Dutton Creek	50
Pilot Butte	240
Rex Lake	160
Hamilton Dome	720
Total Wyoming	61,219
MONTANA	
Cut Creek	1,540
Lake Basin	350
Kevin-Sunburst	8,300
Pondera	1,600
Total Montana	11,790
COLORADO	
Florence	1,198
Moffat	836
Fort Collins	2,384
Iles Dome	1,912
Rangely	100
Cow Creek	512
Boulder	25
Total Colorado	6,967
NEW MEXICO	
Rattlesnake	862
Hogback	500
Artesia	956
Cap Rock	156
Table Mesa	9
Total New Mexico	2,483
Total Rocky Mountain	82,459

OKLAHOMA FIELDS

(Continued from Page 48)

Jones	9- 8-6	7	645
Taylor	10- 8-6	4	1,305
Taylor, W.	10- 8-6	3	531
Walker	22- 8-6	4	665
Slick:			
Jones	3- 8-6	1	109
Texas:			
Reed	14- 8-6	11	890
Tidal:			
Grayson	13- 8-6	4	345
Harjoche	10- 8-6	6	1,305
Twin States:			
Jones	11- 8-6	1	....
Total	311		50,773
Earlsboro Pool			
Amerada:			
Anderson	15- 9-5	2	535
Cowden	4- 9-5	7	1,221
Rogers	3- 9-5	2	147
Atlantic & Sinclair:			
Foreman	18- 9-5	1	145
Barnsdall:			
Brown	10- 9-5	4	1,737
Bruner, F.	2- 9-5	3	303
Bruner, N.	10- 9-5	3	784
Cudjo	14- 9-5	1	23
Davis, D.	11- 9-5	3	213
Davis, J.	11- 9-5	4	1,332
Davis, M.	11- 9-5	2	57
Gibson	9- 9-5	8	1,989
Hern	15- 9-5	1	1
Ingram	1- 9-5	8	937
Pack, S.	10- 9-5	4	128
Peter	10- 9-5	4	92
Sango	1- 9-5	4	2,170
Sebalka	16- 9-5	1	273
Sullivan, H.	11- 9-5	1	12
Sull-Harjo	10- 9-5	2	31
Wasutke	12- 9-5	4	876
Burke-Greis:			
Wisner	6- 9-6	1	990
Carter:			
Davis	13- 9-5	2	125
James	6- 9-6	4	4,050
Sango	1- 9-5	1	10
Continental:			
Kays	2- 9-5	2	10
Spencer	12- 9-5	4	1,185
Empire:			
Barker	12- 9-5	1	85
Edmondson	3- 9-5	3	168
Gypsy:			
Bruner	10- 9-5	4	3,860
Carter, B.	11- 9-5	8	3,740
Earl	16- 9-5	1	17
Hunick	5- 9-5	1	1,905
Noble	12- 9-5	4	1,820
Peter	10- 9-5	3	290
Sango	1- 9-5	11	4,970
State	16- 9-5	4	1,090
Independent:			
Bruner	10- 9-5	3	465
Sullivan	10- 9-5	1	20
Knapp	8- 9-5	3	1,315
Independent-Margay:			
Gains	11- 9-5	3	750
Magnolia:			
Bryant	9- 9-5	6	315
Cowden	4- 9-5	4	28
Dixon	12- 9-5	1	22
Edmondson	3- 9-5	2	5
Holmsley	11- 9-5	7	802
Hyde	13- 9-5	1	1,527
Ingram	10- 9-5	1	32
Lena	10- 9-5	3	49
Sexy	12- 9-5	9	2,715
Simpson	10- 9-5	4	461
Sparks	11- 9-5	7	820
Sullivan	12- 9-5	3	105
Mid-Continent:			
McCumber	9- 9-5	7	87
Mid-Kansas:			
Anderson	14- 9-5	3	60
Phillips:			
Dunaway	14- 9-5	1	23
Prairie:			
Baker	24- 9-5	1	50
Davis	12- 9-5	3	2,760
Graham, C.	2- 9-5	2	10
Graham, O.	10- 9-5	4	915
Stidham	11- 9-5	11	1,845
Roxana:			
Bayless	17- 9-5	1	15
Hearn	13- 9-5	1	125
Spencer	12- 9-5	2	641
Shaffer:			
Clark	1- 9-5	3	215
McCoy	36-10-5	1	990
Sinclair:			
Foreman	18- 9-5	1	15
Hollins	12- 9-5	1	50
Sango	2- 9-5	4	3,000
Skelly:			
Mays	1- 9-5	1	2,643
Shepard	6- 9-6	1	1,285
Spencer	12- 9-5	1	544
Skelly & Atlantic:			
Sherry	6- 9-6	2	1,707
Slick et al:			
Campbell	6- 9-6	2	510
Superior:			
Ingram	1- 9-5	1	984
Walker	2- 9-5	3	3,036
Texas:			
Anderson	2- 9-5	8	400
Brown	10- 9-5	8	437
James	6- 9-6	1	385
Rogers	5- 9-5	4	2,415
Wilmott	10- 9-5	7	600
Tidal:			
Walker	35-10-5	1	1,895
Watkins	9- 9-6	7	7,710
Twin States:			
Barker	12- 9-5	3	59
Hern	2- 9-5	4	180
Total	282		76,243
Seminole Pool			
Amerada:			
Fixico	23- 9-6	4	483
Killingsworth	23- 9-6	4	447
Rentie	23- 9-6	3	408
Atlantic:			
Cudjo, N.	35- 9-6	3	590
Barnsdall:			
Carter	24- 9-6	7	380
Henry	14- 9-6	2	498
Jones	34- 9-6	4	1,075
Carter Oil:			
B. Carter	24- 9-6	2	150
F. Carter	23- 9-6	3	110
Creamer	34- 9-6	2	16
Cudjo, E.	35- 9-6	4	265
Cudjo, W.	34- 9-6	1	30
Gilliland	27- 9-6	1	210
Grisso	23- 9-6	4	365
Grisso, M.	15- 9-6	1	165
Killings, G. F.	14- 9-6	4	55
Killings, M. E.	23- 9-6	12	4,352
Knapp	13- 9-6	3	30
Lukes	27- 9-6	5	1,010
Pounder	34- 9-6	2	117
Simpson	35- 9-6	2	110
Strothers	34- 9-6	4	277
Vierson	23- 9-6	2	25
Empire:			
Gross	25- 9-6	2	35
Wilson	34- 9-6	2	265
Gypsy:			
Butler	35- 9-6	4	732
Carter	24- 9-6	8	724
Cudjo	34- 9-6	4	315
Fixico	26- 9-6	7	55
Harjo	25- 9-6	3	540
Wolfe	26- 9-6	6	380
Independent:			
Fixico, P.	23- 9-6	3	465
Harjo	25- 9-6	2	30
Butler	35- 9-6	3	1,235
Fixico, T.	26- 9-6	6	395
Jones	26- 9-6	4	234
I. T. I. O.:			
Allen	25- 9-6	2	113
Bowlegs	26- 9-6	12	2,388
Goodin	23- 9-6	4	352
Harjo	23- 9-6	3	51
James	24- 9-6	2	222
Reed	24- 9-6	1	10
Kingwood:			
Johnson	22- 9-6	3	703
Magnolia:			
Boren	2- 8-6	1	7
Franks	25- 9-6	3	644
Mid-Continent:			
Rentie	14- 9-6	9	420
Tayeche	24- 9-6	7	220
Phillips:			
Strothers	27- 9-6	2	85
Prairie:			
Gross	25- 9-6	5	70
Mason	36- 9-6	1	60
Spencer	13- 9-6	1	10
Strothers	27- 9-6	8	2,305
Pure Oil:			
Strothers	26- 9-6	17	5,205
B. Strothers	36- 9-6	4	1,649
C. Strothers	34- 9-6	1	454
Roxana:			
Harber	22- 9-6	2	239
Lasley	22- 9-6	2	28
Sinclair:			
Carter	13- 9-6	2	25
Cudjo "A"	35- 9-6	6	1,002
Cudjo "B"	35- 9-6	4	802
Dicey	22- 9-6	2	105
Fixico	23- 9-6	4	1,045
Slick:			
Cudjo	35- 9-6	3	852
Franks	35- 9-6	6	1,698
Giblet	35- 9-6	3	1,521
Tiger	1- 8-6	1	45
Superior:			
Cudjo	35- 9-6	4	236
Texas:			
Mayhue	14- 9-6	1	270
Strothers	2- 9-6	1	125
Tidal:			
Carter	24- 9-6	4	475
Fixico	26- 9-6	6	1,489
Harjo	25- 9-6	3	10
Harjo, T.	23- 9-6	5	125
Turman:			
Cudjo	35- 9-6	4	709
Grisso	35- 9-6	1	115
Jones	34- 9-6	4	1,166
Total	287		43,623
Searight Pool			
Amerada:			
Johnson	4- 9-6	1	40
Strothers	3- 9-6	2	1,047
Barnsdall:			
Jackson	5- 9-6	1	30
Carter:			
Davis	4- 9-6	6	477
Frazier	3- 9-6	6	3,165
Johnson	3- 9-6	1	18
Kiker	2- 9-6	1	22
Mandler	3- 9-6	2	10
Scott	26-10-6	1	15
Gypsy:			
Cudjo	4- 9-6	3	725
Mid-Continent:			
Grayson	34-10-6	6	55
Saloche	33-10-6	5	780
Nevins	32-10-6	1	915
Pine:			
Lula	4- 9-6	1	22
Prairie:			
Cannon	33-10-6	1	5
J. Carter	10- 9-6	1	3
Houch	33-10-6	1	4
Kincaid	33-10-6	2	60
Wimer	22-10-6	1	15
Pure:			
Aldridge	3- 9-6	4	1,166
Roxana:			
Strothers	3- 9-6	4	125
Sinclair:			
Polly	3- 9-6	4	1,400
Superior:			
Varnum	4- 9-6	1	38
Texas:			
Fleet	4- 9-6	1	30
Twin States:			
Varnum	4- 9-6	2	12
Wilcox:			
Chupco	4- 9-6	8	1,051
Total	67		11,230

Totals

Field—	Wells	Prod.
Little River	294	120,244
Maud	5	629
Mission	11	95
Bowlegs	311	50,773
Earlsboro	282	76,243
Seminole	287	43,623
Searight	67	11,230
Grand total	1,257	302,837

Pontotoc County

American Oil & Refining Co. made location for No. 1 Robertson, NW cor. NE SW, Section 19-5-5. Belchic & Laskey moved the rig out for No. 1 Haney, C W half Section 31-5-7. Homaokla Oil Co. has a machine at the location for No. 9 Shields, SW cor. NE NE, Section 4-4-8. Louisiana Oil Refining Co.'s No. 12 Perry, NE cor. Section 19-5-8, Allen Pool, is being deepened and is setting 5-inch casing at 2,713 feet. Westheimer & Daube's rig is up for No. 7 Wade, NE cor. SE SW, Section 19-5-8.

O. K. Portland Cement Co.'s No. 2 Mathews, C NW SW, Section 24-4-7, has been shut in for 700,000 feet of gas in sand at 1,370-72 feet. W. R. Ramsey's No. 1 Parker, SW cor. NW SE, Section 17-5-8, Allen Pool, was deepened from 2,412 feet to 2,550 feet and swabbed 180 bbls. No. 1 Millner, SE cor. NW SW, Section 17-5-8, swabbed 210 bbls. from sands at 2,585-2,635 feet and 2,366-76 feet. Westheimer & Daube's No. 5 Wade, SW cor. NE, Section 19-5-8, was completed for 240 bbls. in Cromwell sand at 2,555-2,612 feet.

Pottawatomie County

Roxana and others' No. 1 Lowe, SW cor. NW NE, Section 17-6-5, is rigging up. Tidal Oil Co. is erecting the rig for No. 2 Smith, SE cor. NW SE, Section 26-7-4, St. Louis Pool. Pure Oil Co. made location for No. 2 Dodson, NW cor. SE SE, Section 26-7-4. Tidal Oil Co.'s No. 1 Smith, NE cor. NW SE, Section 26-7-4, is rigging up. Gypsy Oil Co. has the rig on the ground for No. 1 Roseman, NW cor. NE NW NE, Section 26-7-4. The cellar has been dug for No. 4 Dodson, SW cor. NE SE, Section 26-7-4.

Sinclair Oil & Gas Co. is building the rig for No. 4 Neeley, SW cor. NW SW, Section 25-7-4. Westheimer & Daube's rig is up for No. 6 Freid, SE cor. SW NW, Section 24-7-4. Magnolia Petroleum Co. made location for No. 1 Carroll, SW cor. NW SE, Section 1-7-5. Twin State Oil Co. has the rig on the ground for No. 1 Colin, NE cor. SW, Section 7-8-5, Maud area. Tidal Oil Co. has the cellar dug for No. 1 Brown, NE cor. SW SW, Section 18-8-5. Pure Oil Co.'s No. 3 Lindley, NW cor. SE, Section 18-8-5, is a cellar. Independent Oil & Gas Co. is building the rig for No. 1 Harding, SE cor. NW, Section 18-8-5.

Sinclair Oil & Gas Co.'s No. 4 Bellars, SW cor. NW NE, Section 19-8-5, is a cellar. Pure Oil Co. is building the rig for No. 1 Urbanskey, NW cor. SW NE, Section 19-8-5. Phillips Petroleum Co. made location for No. 2 Hudson, SE cor. NE NW, Section 19-8-5. Darby Petroleum Co. is erecting the rig for No. 1 Ketchum, NE cor. SE NW, Section 19-8-5. The Prairie Oil & Gas Co. made location for No. 2 Helen Campbell, NE cor. NE SW, Section 18-8-5, Maud area.

Sinclair Oil & Gas Co.'s No. 6 Blandin, SE cor. NW SW, Section 24-7-4, St. Louis Pool, was completed for 500 bbls. from Simpson sand at 4,233-73 feet. No. 7 Blandin, NE cor. NW SW, Section 24-7-4, swabbed 275 bbls. from Simpson sand at 4,135-84 feet. No. 8 Blandin, NW cor. NE SW, Section 24-7-4, topped Simpson sand at 4,130 feet, drilled to 4,163 feet in sand and swabbed 590 bbls. No. 9 Blandin, SE cor. NE SW, Section 24-7-4, swabbed 735 bbls. from Simpson sand at 4,155-89 feet. No. 10 Blandin, NE cor. SE SW, Section 24-7-4, made 325 bbls. on swab from Simpson sand at 4,325-55 feet. No. 11 Blandin, SW cor. SE SW, Section 24-7-4, swabbed 240 bbls. from Simpson sand at 4,160-4,223 feet. No. 2 Coley, NE cor. SE SE, Section 24-7-4, made 243 bbls. from Hunton lime at 3,658-3,936 feet. No. 1 Bruno, CNL NE, Section 26-7-4, flowed 1,630 bbls. from Simpson sand at 4,213-56 feet.

Independent Oil & Gas Co.'s No. 8 Youts, SE cor. NE SE, Section 19-7-5, flowed 1,550 bbls. from Wilcox sand at 4,128-50 feet. Sinclair Oil & Gas Co.'s No. 4 Kitch-ee, SE cor. NW SW, Section 19-7-5, is pumping 80 bbls. from Hunton lime at 4,198 feet after plugging back from 4,297 feet in Wilcox. No. 5 Kitch-ee, NE cor. SW SW, Section 19-7-5, pumped 235 bbls. from Simpson sand at 4,150-67 feet. No. 6 Kitch-ee, NE cor. NW SW, made 160 bbls. from Hunton lime at 3,903-4,012 feet.

T. B. Slick's No. 2 Youts, SE cor. SW, Section 19-7-5, was completed for 1,542 bbls. in Wilcox sand at 4,250-76 feet. Magnolia Petroleum Co.'s No. 1 C. Youts, NE cor. SE SW, Section 20-7-5, swabbed 452 bbls. from Wilcox sand at 4,249-51 feet. No. 5 H. E. Youts, SW cor. NW SW, Section 20-7-5, flowed 2,038 bbls. from Wilcox sand at 4,188-4,213 feet. No. 5 H. E. Youts, SE cor. SW SW, Section 20-7-5, flowed 2,712 bbls. from Wilcox sand at 4,250-96 feet. Phillips Petroleum Co.'s No. 3 Stahl, SW cor. NW NE, Section 30-7-5, made 1,107 bbls. from Wilcox sand at 4,330-71 feet.

The Prairie Oil & Gas Co.'s No. 4 Gammon, SE cor. SE NW, Section 30-7-5, made 1,675 bbls. from Simpson sand at 4,140-63 feet. No. 5 Gammon, SW cor. SW NW, Section 30-7-5, was completed for 930 bbls. in Simpson sand at 4,271-83 feet. No. 2 Gammon, NE cor. SE NW, Section 30-7-5, made 2,970 bbls. from Simpson sand at 4,085-4,260 feet. No. 3 Wolfe, NE cor. NW NW, Section 29-7-5, made 1,255 bbls. from Wilcox sand at 4,227-44 feet.

Seminole County

The Prairie Oil & Gas Co. made location for No. 2 Billington, SW cor. SW NW, and for No. 2 Billington, NW cor. NW SW, Section 11-8-5. Skelly Oil Co. made location for No. 4 Mayes, NW cor. SE NE, Section 1-9-5, Earlsboro Pool. Gypsy Oil Co. has the cellar dug for No. 2 Moser, NE cor. SE NE, Section 1-8-5, Mission Pool. No. 3 Moser is a cellar, SE cor. SW NE, Section 1-8-5. Indepnedent Oil & Gas Co. is building the rig for No. 1 Lawson, NE cor. SE, Section 1-8-5. The cellar is dug for No. 2 Lawson, SE cor. NE SE, Section 1-8-5. Tools are being moved in on No. 4 Lawson, SE cor. Section 1-8-5. No. 3 Lawson, NE cor. SE SE, Section 1-8-5, is a cellar.

Indian Territory Illuminating Oil Co. is moving tools in for No. 1 Cully, SE cor. SW NE, Section 10-8-5. Twin State Oil Co. has the cellar dug for No. 1 Ripley, SE cor. NE, Section 12-8-5. Tidal Oil Co. has dug the cellar for No. 1 Sally, NE cor. SE, Section 12-8-5. Shaffer Oil & Refining Co. dug the cellar for No. 1 Weaver, NE cor. Section 12-8-5. Amerada Petroleum Corp. made location for No. 1 Rice, SW cor. SE SE, Section 5-8-6. Location was made for No. 2 Rice, SE cor. Section 5-8-6. Gypsy Oil Co.'s No. 2 Mission, SE cor. SW, Section 5-8-6, is a cellar. No. 3 Mission, SW cor. SE SW, Section 5-8-6, is a cellar. No. 4 Mission, SE cor. SW SW, Section 5-8-6, is a cellar. No. 5 Mission, SE cor. Section 6-8-6, is a cellar.

Cellar was dug for No. 6 Mission, NW cor. SE SE, Section 6-8-6. Cellar for No. 7 Mission, SW cor. NE SE, Section 6-8-6, has been dug. No. 2 N. Barkus is a cellar, SW cor. SE SW, Section 6-8-6. No. 3 N. Barkus is a cellar, SE cor. SW SW, Section 6-8-6. Cellar for No. 4 N. Barkus has been dug in SW cor. Section 6-8-6. No. 5 N. Barkus is a cellar in NW cor. SW, Section 6-8-6. Cellar for No. 6 N. Barkus is dug in C S half N half SW, Section 6-8-6. Twin State Oil Co. made location for No. 2 Judy, C S half S half, Section 6-8-6. Gypsy has cellar dug for No. 1 S. Barkus, SE cor. SW NW, Section 7-8-6.

No. 2 Barkus is a cellar in SW cor.

NW, Section 7-8-6. Cellar was dug for No. 2 B. Doser, NW cor. SE NE, Section 7-8-6. Cellar for No. 3 B. Doser, SW cor. NE NE, Section 7-8-6, has been dug. No. 4 B. Dower, NE cor. Section 7-8-6, is also cellar. Cellars have been dug for No. 1 Hardy, NE cor. SW NE; No. 2 Hardy, SW cor. NE; No. 3 Hardy, SE cor. NW, and No. 4 Hardy, SW cor. SE NW, Section 7-8-6. Cellars have been dug on C. Harjo lease in Section 7-8-6 as follows: No. 1, NE cor. SE; No. 2, SE cor. NW SE; and No. 3, NE cor. NW SE. Independent Oil & Gas Co. and others' No. 2 Payne, NW cor. NE NW, Section 7-8-6, is a rig on the ground. No. 3 Payne, SW cor. NE NW, Section 7-8-6, is also a rig on the ground.

The rig has been moved out for No. 4 Payne, SE cor. NE NW, Section 7-8-6. Minnehoma Oil Co. made locations on the Neal farm, Section 7-8-6, as follows: No. 2, NW cor.; No. 3, SW cor. NW NW,, and No. 4, SE cor. NW NW. Roxana Petroleum Corp. has the cellar dug for No. 2 Maines, NE cor. NW NW, Section 7-8-6. Location was made for No. 3 Maines, SE cor. SW SW, Section 7-8-6. Roxana Petroleum Corp. and Marland Oil Co. have the cellar dug for No. 2 Hernson, SE cor. NW NE, Section 7-8-6. Carter Oil Co.'s No. 2 Mecco, NE cor. NW NW, Section 8-8-6, is a cellar.

Gypsy Oil Co. has dug the cellar for No. 1 B. Micco, SW cor. NW, Section 8-8-6. No. 2 B. Micco, NW cor. SW NW, Section 8-8-6, is also a cellar. Gypsy Oil Co.'s No. 1 L. Micco, NE cor. NW NE, Section 8-8-6, is a cellar. No. 2 L. Micco, NW cor. NE, Section 8-8-6, is also a cellar. Twin State Oil Co. has dug cellar for No. 2 Hayes, NE cor. Section 8-8-6. Carter Oil Co.'s No. 2 Fuswa, NE cor. NW NW, Section 18-8-6, Maud area, is a cellar.

No. 4 M. Harjo, SE cor. NW SW, Section 13-7-6, is a rig under construction. Independent Oil & Gas Co. is erecting the rig for No. 4 R. Davis, NE cor. SW SW, Section 13-7-6, Little River Pool. Pure Oil Co. is building the rig for No. 10 Cotcha, SE cor. NE, Section 23-7-6. Location has been made for No. 2 Brinson, NW cor. SW, Section 24-7-6. Carter Oil Co. is building the rig for No. 4 Larney, SE cor. NW NW, Section 24-7-6.

Sunray Oil Co. made location for No. 2 Sarney, SE cor. NE NW, Section 19-5-8, Allen Pool. Producers & Refiners Corp. moved the rig out for No. 2 Moppin, SW cor. SW NW, Section 24-7-6. The Prairie Oil & Gas Co. made location for No. 1 E. Micco, SE cor. SW SE, Section 5-8-6. Location for No. 2 E. Micco was also made in SW cor. SW SE, Section 5-8-6. Location for No. 1 Melton, SW cor. SW NW, Section 6-8-6, was made. No. 2 Melton is a location, NW cor. SW NW, Section 6-8-6. Location was made for No. 1 Townsend, S half NE SW, Section 6-8-6.

Superior Oil Corp. and others' No. 3 Walker, NE cor. Section 2-9-5, Earlsboro Pool, was completed for 325 bbls. in Wilcox sand at 4,431-33 feet. Carter Oil Co.'s No. 3 James, SW cor. NE SW, Section 6-9-6, was completed for 555 bbls. in Wilcox sand at 4,573-83 feet. The Texas Company's No. 1 James, NW cor. SE, Section 6-9-6, swabbed 750 bbls. from Wilcox sand at 4,367-77 feet. The Prairie Oil & Gas Co.'s No. 1 Rogers, SE cor. NE SE, Section 14-10-6, has been abandoned at 4,725 feet in Sylvan shale. Phillips Petroleum Co.'s No. 1 Dixon, SE cor. SW, Section 31-8-7, is dry and abandoned at 4,407 feet.

Independent Oil & Gas Co. and White Eagle Oil & Refining Co.'s No. 4 Davis, SW cor. SE, Section 2-7-6, Little River Pool, was completed for 480 bbls. in Wilcox sand at 4,150-71 feet. Carter Oil Co.'s No. 2 Moore, SW cor. NE NW, Section 11-7-6, made 452 bbls. from Wilcox sand at 4,330-57 feet. The Texas Company's No. 4 Janey, NW cor. NE SW, Section 11-7-6, swabbed 345 bbls. from Wilcox sand at 4,530-41 feet. Independent Oil & Gas Co.'s No. 3 R. Davis, SE cor. SW SW, Section 13-7-6, made 1,050 bbls. from Wilcox sand at 4,397-4,408 feet. Reiter-Foster Oil Co.'s No. 4 Bunyard, NE cor. NW SW, Section 14-7-6, made 560 bbls. from Wilcox sand at 4,269-80 feet. Independent Oil & Gas Co.'s No. 4 Tewee, NW cor. SE, Section 14-7-6, was completed for 759 bbls. in Wilcox sand at 4,410-20 feet.

The Prairie Oil & Gas Co.'s No. 8 Sunny, NE cor. NE NW, Section 14-7-6, made 785 bbls. from Wilcox sand at 4,135-49 feet. No. 3 Talley, NE cor. SE SW, Section 14-7-6, made 660 bbls. in Wilcox sand at 4,256-67 feet. No. 4 Talley, SW cor. SE SW, Section 14-7-6, flowed 510 bbls. from Wilcox sand at 4,385-91 feet. No. 8 Gibson, SW cor. SE NW, Section 14-7-6, was good for 927 bbls. from Wilcox sand at 4,346-58 feet. T. B. Slick's No. 3 Williams, NE cor. SE, Section 15-7-6, is dry and abandoned at 4,757 feet.

Carter Oil Co.'s No. 3 Cotcha, NW cor. SW NE, Section 23-7-6, has been completed for 290 bbls. in Wilcox sand at 4,412-16 feet. The Texas Company's No. 3 Hotulke, NE cor. SW NW, Section 23-7-6, swabbed 555 bbls. from Wilcox sand at 4,370-77 feet. Louisiana Oil Refining Co.'s No. 2 Statler, SW cor. SE SW, Section 7-5-8, Allen Pool, made 200 bbls. from Cromwell sand at 2,694-2,734 feet. Sunray Oil Co.'s No. 1 Sarney, NE cor. NW, Section 19-5-8, swabbed 623 bbls. from Cromwell sand at 2,627-2,720 feet.

Bryan County

W. G. Endicott and others' rig is up for No. 1 Craige, C NW NE, Section 36-9s-9.

Caddo County

Magnolia Petroleum Co.'s No. 1 Shelby, SW cor. Section 28-10-12w, has been abandoned at 4,472 feet.

Carter County

Magnolia Petroleum Co. is erecting the rig for No. 5 E. Hefner, NW cor. SE SW, Section 33-1s-3w. Tex-Okla Drilling Co. has rig material on the ground for No. 1 R. Colvert, SW cor. NW SW, Section 33-4s-2. Roxana Petroleum Corp.'s No. 1 Snow, SW cor. NW SE, Section 23-1s-3w, is making 20 bbls. from sands at 2,314-2,525 feet.

Creek County

Magnolia Petroleum Co. is preparing to deepen No. 1 Derrisaw, SE cor. NW SW, Section 6-17-7. Roxana Petroleum Corp. has the rig up for No. 1 Jones, NW cor. SE NW, Section 7-15-7. Winemiller Oil Corp. moved the rig material to the location for No. 1 Stewart, NW cor. SW SE, Section 32-17-12. Flynn & Morgan and others' No. 1 Ralston, NE cor. NW SW, Section 1-16-9, is a rig on the ground. Madden & Madden and others' No. 3 Wright, SW cor. SE, Section 13-15-9, is a rig. Transcontinental Oil Co. has the rig up for No. 1 Taylor, NW cor. SW SE, Section 10-14-9.

Twin State Oil Co.'s No. 3 Coachman, NW cor. NE, Section 20-17-7, Drumright area, has been completed for 135 bbls. in sand at 2,717-62 feet. Independent Oil & Gas Co.'s No. 2 Beaver, SE cor. NW SW, Section 15-14-8, made 85 bbls. from sand at 3,840-63 feet. Vickers Syndicate's No. 1 Unallotted, SW cor. SE SW SE, Section 34-18-11, is dry and abandoned at 1,997 feet. W. M. Banks' No. 2 Crider, CSL SE NW, Section 31-17-12, is dry and abandoned in Wilcox sand at 2,574 feet. Reserve Oil Co.'s No. 1 Kimball & Reading, SE cor. SW SE, Section

(Continued on Page 119)

OIL CITY TANK CAR CO.

OIL CITY, Pa., Nov. 3.—The Oil City Tank Car Co. has been organized here, the capital being subscribed by Oil City, Titusville and Warren interests. The business of the corporation will be repairing tank cars, manufacturing tanks, gasoline storage tanks, air tanks, both welded and riveted construction, and the manufacturing of general refining equipment.

The principal office and manufacturing plant will be located at the plant formerly occupied by and known as the Oil City Engine & Power Co., Oil City.

The officers are: George L. Craft, president; L. D. Fulton, vice president; J. G. Pierce, secretary; B. H. Mathis, treasurer; W. K. Borland, assistant secretary and treasurer. Directors: G. L. Craft, L. D. Fulton, J. G. Pierce, B. H. Mathis, W. K. Borland, Dr. E. H. Leslie, W. C. Heasley, W. S. Berland.

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 44)

Texas & Pacific C. & O. Co.'s No. 2 University, 2,310 ft. S and 1,650 ft. W line Sec. 34, Blk. 30, University Land ..... Location.

Tidal Oil Co.'s No. 1 University-D, 990 ft. from W and 1,650 ft. from S lines, Sec. 34, Blk. 30, University Land ..... Drlg. 1,775 ft.

CROCKETT COUNTY

Barbara Oil Co.'s No. 1 Cox, 237 ft. S and 1,190 ft. E of NW cor. R. B. Dickenson Sur. ..... Drlg. 900 ft.

V. T. Bolin & Co.'s No. 1 P. C. Coates, NW cor. SW Sec. 4, Blk. 2, I.&G.N. Sur. ..... Cleaning out 2,110 ft.

T. W. Callahan et al's No. 1 J. S. Todd, C SW Sec. 13, Blk. "YZ," E.L.&R.R. Sur. ..... Top salt 905 ft.; set 8-in. casing 1,155 ft.; 2,000,000 ft. gas 1,2 ft.; shut down 2,015 ft.

Compton's Co.'s No. 1 University Land, 1,875 ft. N and 916 ft. E of SW cor. Sec. 15, Blk. 50, University Land ..... Shut down 2,062 ft.; 300 ft. oil hole at total depth and 1,200 water 1,965-85 ft.; pulling pi 2,220 ft.

W. W. Donnelly & Young's No. 1 Massey, Sec. 29, Blk. U-V ..... Shut down 380 ft.

W. W. Donnelly & Young's No. 1 Shannon, SW SW SE Sec. 42, Blk. BB, T.C.R.R. Sur. ..... Spudded and shut down.

W. W. Donnelly & Young's No. 1 Middlebuster, C Sec. 11, Blk. 9, D.&S.E. Sur. ..... 7,000,000 ft. gas at 1,662 ft.; clean ing out 1,680 ft. (cor.).

Fuhrman Pet. Corp.'s No. 1 Pagett,, 330 ft. from CNEL Sec. 17, S. C. White Sur. A-3,003 ..... Set 8-in. casing top lime 1,475 ft. total depth 1,897 ft.; sulphu water; plugging back to shoe

Moncrief, Zoch et al's No. 1 J. H. Tippett, 330 ft. from C NE line Sec. 45, Blk. 31, H.&T.C.R.R., but in Sec. 1, Blk. JH ..... Location.

Texas-Canadian Oil Co.'s No. 1 University, 330 ft. from N and 305 ft. from E lines, Sec. 4, Blk. 33 ..... Drlg. 565 ft.

J. D. Wheeler's No. 1 State Land, 744 ft. S and 1,250 ft. E from SE cor. Sec. 73, Blk. 1, O.&G.N.R.R., but in Vacancy Strip ..... Drlg. 320 ft.

CULBERSON COUNTY

Deep Rock Oil Co.'s No. 2 Seay, 200 ft. N and 250 ft. E of CSL Sec. 20, Blk. 59, T.&P. Sur. ..... Moving in machine.

W. S. Hillyer's No. 1 McGregor, C NW Sec. 14, Blk. 81, ... Drlg. 200 ft.

Hickey & Stiver's No. 1, C. O. Finley, 660 ft. N and 1,980 ft. W, Sec. 20, Blk. 82 ..... Hole full water; small oil show 1,381 ft.; pipe set 1,418 ft.; total depth 1,568 ft., sandy lime; trying to shut off water.

Scott & Dittman's No. 1 Miller, 1,160 ft. N and 2,480 ft. E Sec. 1, Blk. 97, Public School Land ..... Rainbow 1,056 ft.; 300 ft. sulphur water 1,725 ft.; shut down for casing 1,767 ft.

DAWSON COUNTY

Magnolia Petroleum Co.'s No. 1 W. A. Jetter, C Sec. 1, Blk. 34, Twp. 4-N ..... Top salt 1,650 ft.; drlg. 1,811 ft. lime and anhydrite.

ECTOR COUNTY

Pennsylvania Drlg. Co.'s No. 1 W. E. Connell, C NE Sec. 7, Blk. B-16 ..... Location.

EL PASO COUNTY

Sillix et al's No. 1 W. D. Malone, Sec. 46, James M. Day Sur. ..... Set 12½-in. casing 1,010 ft.; shu down 1,010 ft.

FISHER COUNTY

Bickerstaff et al's No. 1 McWhirter, 2,640 ft. E and 150 ft. N of SW cor. of Sec. 295, Blk. 2, H.&T.C. ..... Shut down 1,328 ft.

Cranfill & Reynolds' No. 1 J. L. Sharp, C NE of SW Sec. 207, B.B.B.&C. Sur. ..... Drlg. 760 ft.

Cranfill & Reynolds' No. 1 E. G. Young, C of NW of SW of Sec. 199, B.B.B.&C. Sur. ..... Drlg. 3,070 ft.

Hucony Gas Co.'s No. 1 D. F. Maberry, 1,078 ft. S and 168 ft. W of NE cor. Elijah Bell Survey No. 327 ..... Drlg. 1,925 ft.

Midwest Exploration Co.'s No. 2 Decker, 330 ft. S and E of NW cor. of S 60 ac. of W 160 ac. of N 320 ac. of Sec. 8, Blk. R, W. E. Richardson Sur. ..... Location.

Midwest Exploration Co.'s No. 1 Higginbotham, Sec. 8, Blk. R ..... Location.

Roeser & Pendleton's No. 1-B Decker, 455 ft. N and 330 ft. E of SW line of N 100 ac. of W 160 ac. of N 320 ac. of Sec. 8, Blk. R, W. E. Richardson Sur. ..... Drlg. 2,700 ft.

Sun et al's No. 2 Young, Sec. 208, Blk. 1, C NE SE, B.B.B.&C. Sur. ..... Underreaming 2,925 ft.

GAINES COUNTY

Pure Oil Co.'s No. 1 A. A. Williamson, 1,650 S and 330 ft. W of NE cor. of Sec. 110, Blk. B, D.&W.R.R. ..... Rigging rotary.

GLASSCOCK COUNTY

Josey & Finchbaugh's No. 1 S. R. Cox, 1,320 ft. W or NE cor. and located on the N line of Sec. 29, Blk. 33, Twp. 4s, T.P.R.R. Sur. ..... Hole full salt water 780 ft.; hole full salt water 1,801-15 ft.; set 6-in. casing 2,607 ft.; top lime 2,602 ft.; drlg. 3,200 ft.

World Oil Co.'s No. 2 L. S. McDowell, SW SE SW Sec. 32, Blk. 34, Twp. 2s, elev. 2,523 ft., contract depth 3,200 ft. ..... Top salt 925 ft.; 8-in. casing set 2,025 ft.; drlg. 3,000 ft.; hole full salt water.

HOWARD COUNTY

Andrews & McCamey's No. 1 Neal, 200 ft. S and W of NE cor. Sec. 17, Blk. 32, Twp. 1s ..... Drlg. 1,920 ft.

Bristow & Merrick's No. 2 D. Roberts, 990 ft. E and 330 ft. N of SW Sec. 137, Blk. 29, W.&N.W.R.R. Sur. ..... Drlg. 1,905 ft.

Bristow & Merrick's No 3 Dora Roberts, 1,650 ft. E and 330 ft. N of SW cor. Sec. 137, Blk. 29 ..... Drlg. 2,947 ft.

W. W. Donnelly et al's No. 1 Clay, SW cor. W half NE Sec. 127, Blk. 29, W.&N.W. ..... 700 ft. oil in hole from 1,919-ft.; 8 bbls. water 2,635-50 ft. sulphur water 3,040 ft.; total depth 3,135 ft.; plugging back 1,900 ft.; shut down.

Dunnigan & Hyer's No. 3 Clay, 785 ft. N and 250 ft. E of SW cor. Sec. 126, Blk. 29 ..... Location.

F. H. E. Oil Co.'s No 5 Dora Roberts-B, 1,650 ft. N, 2,310 ft. W of SE cor. Sec. 137, Blk. 29, W.&N.W. ..... Drlg. 2,656 ft.

F. H. E. Oil Co. et al's No. 7-B Dora Roberts, 330 ft. S and E of NW of Sec. 137, Blk. 29 ..... Drlg. 1,489 ft.

F. H. E. Oil Co.'s No. 5-D Dora Roberts, 2,310 ft. S and 1,650 ft. E of NW cor. Sec. 136, Blk. 29 ..... Fishing 1,548 ft.

Green Oil Co. et al's No. 1 J. W. Furrh, C SW cor. Sec. 11, Blk. 31 ..... Drlg. 503 ft.

L. C. Harrison et al's No. 1 G. M. Podge Est., SE cor. Sec. 9, Blk. 30, T-1-S, T.&P. Sur. ..... Hole full salt water 1,475-1,54 ft.; top lime 1,825 ft.; fishin 2,585 ft.

Henshaw Oil Corp.'s No. 1 Dora Roberts-C, 1,423 ft. S and 2,723 ft. E of NW cor. Sec. 6, Blk. 32, T-2-S, T.P. Sur. ..... Drlg. 1,330 ft.

Henshaw Oil Corp.'s No. 2-A Settles, 1,354 ft. E and 330 ft. S of NW cor. Sec. 6, Blk. 32, Twp. 2s, T.&P. Sur. ..... Spudding.

Louisiana Oil & Ref. Corp.'s No. 1 Kloh & Rumsey, 2,970 ft. E and 2,310 ft. S of NW cor. Sec. 3, Blk. 32, T-2S, T.&P.R.R. Sur. ..... Rigging up standard tools.

Louisiana O. & R. Corp.'s No. 1 W. R. Settles, 2,093 ft. E and 1,432 ft. S of NW cor. Sec. 6, Blk. 32, Twp. 1s, T.&P. Sur. ..... Drlg. 1,480 ft.

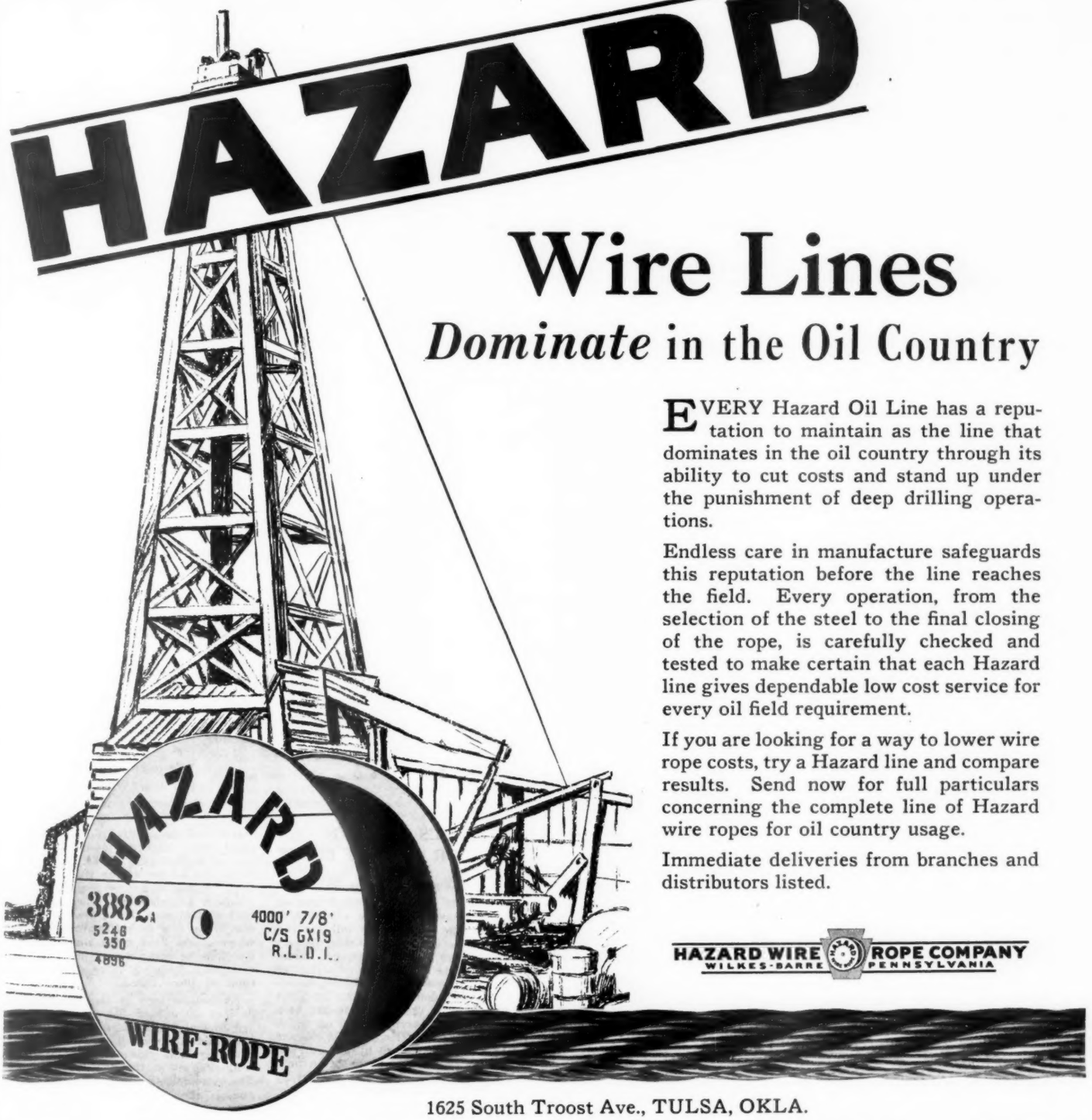
Louisiana Oil Corp.'s No. 2 Settles, 2,306 ft. E and 330 ft. S NW cor. Sec. 6, Blk. 32, Twp. 2s, T.&P. Sur. ..... Location.

Magnolia Pet. Co.'s No. 11 Kelly-Chalk, 1,650 ft. S and 330 ft. E of NW cor. Sec. 124, Blk. 29, W.&N.W.R.R. Sur. ..... Set 10-in. casing 680 ft.; drlg 1,400 ft.

HAZARD

Wire Lines

Dominate in the Oil Country



EVERY Hazard Oil Line has a reputation to maintain as the line that dominates in the oil country through its ability to cut costs and stand up under the punishment of deep drilling operations.

Endless care in manufacture safeguards this reputation before the line reaches the field. Every operation, from the selection of the steel to the final closing of the rope, is carefully checked and tested to make certain that each Hazard line gives dependable low cost service for every oil field requirement.

If you are looking for a way to lower wire rope costs, try a Hazard line and compare results. Send now for full particulars concerning the complete line of Hazard wire ropes for oil country usage.

Immediate deliveries from branches and distributors listed.

HAZARD WIRE ROPE COMPANY
WILKES-BARRE PENNSYLVANIA

1625 South Troost Ave., TULSA, OKLA.

New York Pittsburgh Chicago Denver Los Angeles San Francisco Birmingham

Distributors in the Eastern Fields

CROTTY & CO.
Parkersburg, W. Va.

PRICHARD SUPPLY CO.
Mannington, W. Va.

DANSER SUPPLY CO.
Weston, W. Va.

MOUNTAIN IRON & SUPPLY CO.
Parkersburg, W. Va., El Dorado, Kans.

IVERSON TOOL CO.
Tulsa, Okla.

Distributors in California

UNITED OIL WELL & SUPPLY CO.
Los Angeles

Distributors in Wyoming-Colorado

GREAT NORTHERN TOOL AND SUPPLY CO.
Billings, Mont.

THE PRODUCERS SUPPLY & TOOL CO.
Marietta, Ohio

CAMERON TOOL & SUPPLY CO.
Cameron, W. Va.

Distributors in Texas

LONGHART SUPPLY CO.
619 Petroleum Bldg., Fort Worth, Texas

FORT WORTH WELL MACHINERY & SUPPLY CO.
Fort Worth, Texas

Distributors in Oklahoma, Kansas, and the Panhandle of Texas

BOVAIRD SUPPLY CO.
904 Mid-Continent Bldg., Tulsa, Okla.

BRADFORD SUPPLY CO.
Bradford, Pa.

THE McJUNKIN SUPPLY CO.
Charleston, W. Va.

LeFors Pet. Co.'s No. 3 J. M. Shaw, 293 ft. from N line and 271 ft. from E line of Leach Sur. ..... Rig.
LeFors Pet. Co.'s No. 4 J. M. Shaw, 1,650 ft. from N line and 375 ft. from W line, T. Leach Sur. ..... Spud.
Magnolia Pet. Co.'s No. 2 Archer, SE N½ SE Sec. 174, Blk. 3 ..... Drlg. 1,140 ft.
Magnolia Pet. Co.'s No. 2 W. Harrah, 990 ft. from N line and 330 ft. from W line of NW. Sec. 150, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,565 ft.
Magnolia Pet. Co.'s No. 3 W. Harrah, 330 ft. from NE cor. NW. Sec. 150, Blk. 3, I.&G.N. Sur. ..... Rig.
Magnolia Pet. Co.'s No. 3 fee, 600 ft. from S line and 330 ft. from E line, Sec. 11, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,440 ft.
Magnolia Pet. Co.'s No. 1 Gething, 530 ft. each way from SE SW Sec. 14, Blk. A-9, H.&G.N. Sur. ..... Cellar.
Magnolia Pet. Co.'s No. 1 Saunders, 330 ft. from SE W¼ of NW, Sec. 4, Blk. 1, A.C.H.&B. Sur. ..... Drlg. 1,800 ft.
McElroy Oil Co.'s No. 2 Bruce Bull, 155 ft. from N line and 240 ft. from W line of E 87.3 acres of Sec. 3 Blk. B-2, H.&G.N.R.R. Sur. ..... Drlg. 1,600 ft.
McMan O. & G. Co.'s No. 2 Binkley, 330 ft. each way from NW cor. W½ SE cor. Sec. 86, Blk. 3, I.&G. N. Sur. ..... Drlg. 2,740 ft.
Midwest Explin. Co.'s No. 2 L. Holmes, 330 ft. from SE and 357 ft. from E lines, SW. Sec. 86, Blk. 3... Drlg. 3,115 ft.
Osborn et als' No. 1 E. E. Barrett, SE cor. NE. Sec. 111, Blk. 3, I.&G.N. Sur. ..... Fishing 3,275 ft.
Panhandle Ref. Co.'s No. 1 Saunders, 330 ft. from S and W lines of E 80 acres of NE. Sec. 3, A.C.H.& B. Sur., Blk. 1 ..... Location.
Parton & Holt's No. 1 Gething, 330 ft each way from SE cor. NE Sec. 14, Blk. A-9 ..... Cellar.
Phillips Pet. Co.'s No. 3 Johns, 330 ft. each way from SW. Sec. 87, Blk. 3, I.&G.N. Sur. ..... Flowed 325 bbls. at 3,119-25 ft.
Phillips Pet. Co.'s No. 4 Johns, 330 ft. each way from NE cor. SE SW Sec. 87, Blk. 3, I.&G.N. Sur. ..... Location.
Phillips Pet. Co.'s No. 1 Bob Olsen, NW cor. S½, Sec. 64, Blk. B-2 ..... T.D. 3,239 ft; plugged back to 3,-230 ft; shot with 440 qts. at 3,-119-3,222 ft; 600 ft. oil and 60 ft. wtr. in hole; drlg. 3,340 ft.
Plains Drlg. Co.'s No. 2 Saunder, 990 ft. from S line and 330 ft. from E line of E ½ SE, Sec. 4, Blk. 1, A.C.H.&B. Sur. ..... Rig.
Pure Oil Co.'s No. 8 Davis, 330 ft. from NW of NE, Sec. 86. Blk. 3, I.&G.N.R.R. Sur. ..... Drlg. 2,940 ft.
Purple Sage Oil Co.'s No. 2 E. B. Johnson ..... 2,000,000 ft. gas; 200 ft. oil 2,870 ft; shot with 510 qts. 2,775-2,-372 ft.; 406 ft. oil; fish. 2,875 ft.
Ray & Massie's No. 3 A. Chapman, 990 ft. from N line, 330 ft. from E line, Sec. 51, Blk. 25, H.&G.N. Sur. .. Swabbed 470 bbls. 2,863-64 ft.
Republic Prod. Co.'s No. 1 G. H. Saunders, 330 ft. each way from SW cor. E½ NW cor. Sec. 4, Blk. 1, A. C.H.&B. Sur. ..... Drlg. 2,210 ft.
Schwald et als' No. 1 fee, 330 ft. each way from NE cor. E ½ SW, Sec. 1, Blk. 1, A.C.H.&B. Sur. ..... Drlg. 300 ft.
Shamrock Oil Co.'s No. 2-A Chapman, 330 ft. each way NW cor. of W 41.6 acres of E½, Sec. 50, Blk. 50, H.&G.N.R.R. Sur. ..... Location.
Shamrock Oil Co.'s No. 1 W. S. Clayton, 866 ft. from NW cor of E 278.4 acres, Sec. 50, Blk. 25, H.&G.N.. Cmt. 8¼-in. csg. 2,196 ft. and S.D.
Skelly Oil Co.'s No. 1 Saunders, 330 ft. from E line, 990 ft. from S line, SW. Sec. 4, Blk. 1, A.C.H.&B. Sur. .. Building rig.
Skelly Oil Co.'s No. 2 Saunders, 231 ft. from S line, 1,-127 ft. from W line, SW. Sec. 4, Blk. 1, A.C.H.&B. Sur. ..... Rig on ground.
Skelly Oil Co.'s No. 3 Saunders, 330 ft. from N line and 990 ft. from W line, SW cor., Sec. 4, Blk. 1, A.C. H.&B. Sur. ..... Cellar.
Skelly Oil Co.'s No. 4 Saunders, 330 ft. from N line and 990 ft. from E line, SW cor., Sec. 4, Blk. 1, A. C.H.&B. Sur. ..... Location.
St. Clair Oil Co.'s No. 1 Rowe, Sec. 32, Blk. R ..... S.D. 1,600 ft.
St. Clair Oil Co.'s No. 1 L. S. Stockton, SE cor. Sec. 35, W. R. Lee Sur. ..... Spudded and S.D.
The Texas Co.'s No. 5 A. Chapman, 1,138 ft. from W and 330 ft. from S lines, SE. Sec. 51, Blk. 25, H. &G.N. Sur. ..... Cellar.
The Texas Co.'s No. 3 Davis, 990 ft. from E line and 330 ft. from N line NW, Sec. 86, Blk. 3, I.&G.N. Sur. .. Drlg. 1,260 ft.
The Texas Co.'s No. 3 M. B. Davis, 2,309 ft. from S line and 2,312 ft. from E line, Sec. 8, Blk. 1, A.C. H.&B. Sur. ..... Drlg. 2,103 ft.
The Texas Co.'s No. 4 H. M. Davis, SE cor. NW. Sec. 86, Blk. 3, I.&G.N. Sur. ..... Drlg. 1,240 ft.
The Texas Co.'s No. 3 McLarty and Lester-A, 330 ft. from NE W½ SW, Sec. 1, Blk. 1, A.C.H.&B. Sur. .... Drlg. 2,470 ft.
The Texas Co.'s No. 1 Bull, 1,043 ft. from N and 330 ft. from E lines, Sec. 2, Blk. B-2, H.&G.N. Sur. ..... Drlg. 2,375 ft.
The Texas Co.'s No. 7 Saunders, 990 ft. from S line and 330 ft from W line of W½ SE cor. Sec. 4, Blk. 1, A.C.H.&B. Sur. ..... Cellar.
The Texas Co.'s No. 3-C Thut, 370 ft. from S and 349 ft. from E lines, Sec. 11, H.&G.N. Sur. ..... 400 bbls. at 2,745-56 ft.
Travis et als' No. 1 J. S. Morse, SE NW SW, Sec. 68, Blk. 25, H.&G.N. Sur. ..... Drlg. 2,100 ft.
Ware et als' No. 1 fee, 990 ft. from N and 400 ft. from W lines, Sec. 18, Blk. 3, A.&B.M. Sur. ..... Rig.
Wilcox Pampa Oil Co.'s No. 29 Wooley & Reynolds, 330 ft. S and W of NE SW, Sec. 61, Blk. 3, I.&G.N. Sur.. Run 5-in. csg. 3,044 ft.
Wilcox Pampa Oil Co.'s No. 30 Wooley & Reynolds, NW SE NW, Sec. 61, Blk. 3 ..... Drlg. 2,860 ft.
United Eight O. & T. Co.'s No. 1 E. B. Clay, SE cor. W½ SW, Sec. 177, Blk. B-2 ..... Drlg. 2,955 ft.; 12,000,000 ft. gas.

HALL COUNTY

Rio Bravo Oil Co.'s No. 1 Hughes est., 950 ft. from N line, 150 ft. from E line, Sec. 29, Blk. H, I. A. Stephens Sur. ..... Set 6-in. 3,600 ft.; S.D. 3,690 ft.

HOCKLEY COUNTY

World Oil Co.'s No. 1 Ellwood, 320 ft. from N and W lines, League 7, Wilbarger County school lands; elevation 3,363 ft; contract depth, 5,000 ft. ..... S.D. 1,455 ft.

HARTLEY COUNTY

Amarillo Oil Co.'s No. 9 Lee Bivins "A," C NW, Sec. 6, Blk 21 ..... 15,000,000 ft. gas 3,300-35 ft; S.D. 3,335 ft.

HUTCHINSON COUNTY

R. G. Barnum et als' No. 1 Garland Sanford, Sec. 78, Blk. 4* ..... S.O. 2,920 ft.; drlg. 3,020 ft.
Barnum & Delmar's No. 1 Johnson Bros., NW cor. E½, NW. Sec. 37, Blk. Y, A.&B. Sur. ..... 2,000 ft. oil 2,954-3,011 ft; swb. 150 bbls. after 160-qt. shot; T.D. 3,020 ft; to deepen.
Devonian Oil Co.'s No. 9 Johnson Bros., 330 ft. S and W of NE cor. of Lot 3, Johnson Bros. Subdivision, M. Whitley Sur. ..... Drlg. 1,120 ft.
Dunnigan et ux's No. 1 C. W. Hugonbyhl, 330 ft. from S line and 330 ft. from E line, N¼, Sec. 4, Blk. T. W.N.G.R.R. Sur. ..... Rig.
Oil Operators Trust Co. and Marland's No. 2 J. M. Stanford-B, Sec. 82, Blk. 46, H.&T.C. Sur. ..... S.D. 3,039 ft.
Phillips Pet. Co.'s No. 12 Elva Whittenburg, E. Tomlinson Sur. ..... S.D. 5,333 ft.
Phillips Pet. Co.'s No. 3 Johnson Bros. (Florence), 412 ft. from W and 270 ft. from N lines, Tract 2, of Geo. Montgomery Sub-div. of Mary Whitley Sur. .... Drlg. 2,710 ft.
Phillips Pet. Co.'s No. 19 Perkins-Martin, 990 ft. S and 330 ft. E of NW cor. of W 240 acres of S 320 acres of Sec. 1, Blk. X02, H.&O.B. Sur. ..... Drlg. 325 ft.
Phillips Pet. Co.'s No. 1 Sanford-Felix, 330 ft. S and E of NW cor. of S 40 acres of E 80 acres of S 160 acres of Sec. 77, Blk. 46, H.&T.C. Sur. ..... Drlg. 2,915 ft.
Phillips Pet. Co.'s No. 1 Sanford-Garford, 330 ft. N and E of SW cor. N 40 acres of E 80 acres of S 160 acres of S 320 acres, Sec. 77, Blk. 46, H.&T. C.R.R. Sur. ..... Drlg. 840 ft.
Premier O. & G. Co.'s No. 1 L. E. Borton, C NE NW NW, Sec. 32, Blk. Y, A.&B. Sur. ..... Rigged up and S.D.
Rock Creek Oil Co.'s No. 2 Johnson, 330 ft. from N and W lines SW SE, Sec. 28, Blk. Y, A.&B. Sur. ..... S.D. 2,700 ft.
Sand Creek Oil Co.'s No. 2 J. H. Jasper, 320 ft. from S line and 387 ft. from W line of 100-acre lease, Sec. 23, Blk. M-23, T.C. Sur. ..... T.D. 3,148 ft.; P.B. to 3,136 ft; shot with 220 qts. 3,036-3,136 ft; T.P. 300 bbls. fluid 50% wtr.; C.O.

Timms et als' No. 2 Garner, 990 ft. S and 330 ft. E of NW cor. J. W. Proctor Sur. ..... Drlg. 940 ft.
Wendell et als' No. 1 Johnson Bros., Sec. 1, Blk. X02.... Set 10-in. csg. 2,035 ft; S.D.
White Eagle Oil Co.'s No. 4 Johnson Bros. (Montgomery) 330 ft. from N and W lines E½, Tract 2, Geo. Montgomery Sub-div. of Mary Whitley Sur. .... Drlg. 1,430 ft.

KING COUNTY

Humble O. & R. Co.'s No. 1 Pitchfork, Sec. 171, Blk. A-96, John H. Gibson Sur. ..... Drlg. 4,620 ft.
The Texas Co.'s No. 1 J. H. Johnson ..... Drlg. 4,040 ft.

LAMB COUNTY

Dan Freel et als' No. 1 Ellwood, CWL, Sec. 9, Blk. T, T. A. Thompson Sur. ..... Spudded and S.D.

LUBBOCK COUNTY

Center Oil Co.'s No. 1 Bowles ranch ..... Small show oil 1,133-40 ft; sand; S.D. 3,943 ft.

MOORE COUNTY

Barnsdall Oil Corp.'s No. 1 L. R. Hagy, NW cor. Thomas Ross Sur. ..... Cmt. 8¼-in. csg. 2,600 ft.; standardizing.
Devonian Oil Co.'s No. 1 J. T. Sneed, Jr., 2,235 ft. from E and 330 ft. from S lines, S 160 acres, N 320 acres of Matilda Robinson Sur. ..... Rig.
Dixie Creek Oil Co.'s No. 1-A Sneed, Jr., 330 ft. N and W of SE cor. E½, Sec. 65, Blk. 3, G.M. Sur. ..... Standardizing 2,332 ft.
Dixie Creek Oil Co.'s No. 4-A Sneed, Jr., 330 ft. S and W of NE cor. E½, Sec. 65, Blk. 3 ..... Drlg. 2,160 ft.
Fritch O. & G. Co.'s No. 1 Lee Burns, C NE 40 acres of N 160 acres, Sec. 4, Geo. Mahan Sur. ..... Spudded and S.D.
McMan O. & G. Co.'s No. 1 Sneed, 2,260 ft. S and 330 ft. W of NW cor. J. W. Proctor Sur., but in Matilda Robinson Sur. ..... Drlg. 1,507 ft.
Phillips Pet. Co.'s No. 1 J. T. Sneed (James) 330 ft N and W of SW cor. P. Bazemore Sur. ..... Standardizing 2,184 ft.
Phillips Pet. Co.'s No. 2 J. T. Sneed, 660 ft. S and 330 ft. W of NW cor. J. H. Proctor Sur. ..... Drlg. 2,150 ft.
Phillips Pet. Co.'s No. 3 Sneed (James), 600 ft. S and 330 ft. W of NW cor. J. W. Proctor Sur., but in Matilda Robinson Sur. ..... Rig.
Prairie and Shamrock's No. 3 Gober, 2,302 ft. from N and 890 ft. from W lines of Sec. 16, Blk. M-1, G. &M. Sur. ..... Set 8-in. 2,696 ft; 20,000,000 ft; gas 2,745-3,366 ft; cmt. 6-in. 3,-505 ft; 1,000 ft. wtr. 3,705 ft; T.D. 3,745 ft; to P.B.
Skelly Oil Co.'s No. 4 Armstrong & Byrd, 1,600 ft. S and 330 ft. E of NW cor. J. W. Proctor Sur. ..... Drlg. 2,380 ft.
Skelly Oil Co.'s No. 5 Armstrong & Byrd, 2,260 ft. S and 330 ft. E of NW cor. J. W. Proctor Sur. ..... Drlg. 300 ft.

MOTLEY COUNTY

Explin. Co.'s No. 1 Tillson ..... S.D. 750 ft. for repairs.
Explin. Co.'s No. 2 Matador Land & Cattle Co., C SW Sec. 37, John Gibson Sur. ..... S.D. 4,000 ft.

ROBERTS COUNTY

Big Bend Oil Co.'s No. 1 Ledrick, Sec. 7, Blk. 5-A ..... Formerly abd. at 5,240 ft; small show 36 grav. oil 5,288-91 ft; S.D. 5,672 ft.

WHEELER COUNTY

Angus et als' No. 2 Morgan, C E¼ NW NE, Sec. 93, Blk. 17, H.&G.N. Sur. ..... Rig.
Arnold Oil Co. et als' No. 1 Ritchey, 420 ft. from E and 460 ft. from S lines of NW cor., Sec. 5, Blk. 24, H.&G.N. Sur. ..... Rig.
Byrens et als' No. 1 Johnson, SW cor. NE, Sec. 88, Blk. A-5, H.&G.N. Sur. ..... Drlg. 1,600 ft.
Chapman & Morgan's No. 1 Otis Hatcher, NW cor. SW SE, Sec. 63, Blk. 17, H.&G.N. Sur. ..... S.D. 715 ft.
Consolidated Gas Utilities Co.'s No. 1 M. Ackley-A, 660 ft. each way from NW cor. W½ SW, Sec. 20, Blk. 24, H.&G.N. Sur. ..... 53,000,000 ft. gas 1,855-1,925 ft.
Lone Star Co.'s No. 1 Ackley, C NE NE, Sec. 20, Blk. 24, H.&G.N. Sur. ..... Drlg. 421 ft.
Lone Star Co.'s No. 1 Hicks, C SW NE, Sec. 52, Blk. 17, H.&G.N. Sur. ..... Rig.
Lone Star Co.'s No. 1 Shelton, C NE SE, Sec. 22, Blk. 24, H.&G.N. Sur. ..... Location.
Lone Star Co.'s No. 1 Trostle, C NW NE, Sec. 90, Blk. 17, H.&G.N. Sur. ..... Drlg. 1,802 ft.
Martin & Debon's No. 1 Gossett, C SE SE, Sec. 101, Blk. 23, H.&G.N. Sur. ..... S.D. 1,625 ft.
L. W. Rook's No. 1 M. Nelson, C SW NE, Sec. 5, Blk. 24, H.&G.N. Sur. ..... Fish. 1,950 ft.
L. W. Rook's No. 2 A. Smock, C SW SE, Sec. 5, Blk. 24, H.&G.N. Sur. ..... Rig.
Upham Gas Co.'s No. 1 Lamb, C N½ NE SW, Sec. 91, Blk. 17, H.&G.N. Sur. ..... Drlg. 310 ft.
White et als' No. 1 J. M. Shelton, C SW NE, Sec. 100, Blk. 17 ..... Top lime 2,094 ft.; S.D. 2,195 ft.

GEOPHYSICS ARE BIG FACTOR ON GULF COAST

(Continued from Page 35)

are 61 known domes on which one or more tests have proved the existence of the underlying salt or the tell-tale cap rock. Five other coastal fields, namely Orange, Goose Creek, Lockport, Sweet Lake and the Somerville district of Washington County, are believed generally to be salt dome fields but at these the existence of the dome has not been proved. The Somerville Field, on which one 100-bbl. well is flowing, was checked geophysically as a dome by the Sun Oil Co. but at the other four fields no indication of domes has been given either by the drill or by instruments. For that reason these five are not included in the list of 37 domes which have proved productive out of the total of 61 known domes. This would show that to date over 60½ per cent of the known domes have produced oil. Two of the 37 domes are now on the productive list.

This percentage, however, cannot be taken as a criterion of the potentiality of the domes for the reason previously mentioned that some of the unproductive domes have not been thoroughly drilled and a few of the old domes have undergone very little drilling. And, in passing, it might be mentioned that many of the oldest producing domes, including Spindletop, have not been drilled on every sector of their top or circumference and still offer possibilities of a revival of prolific production in near areas.

Domes Listed in Tables

In accompanying tables are listed all domes and prospective domes found by geophysical instruments in that territory of southeastern Texas and southern Louisiana known as the Gulf Coast district. Inland domes of northeast Texas, northern Louisiana and the coastal district of Southwest Texas are not included nor are a few in the main Gulf Coast which might have given some slight indications of being domes but which are extremely doubtful, more doubtful than some of those listed.

As can be seen in the tables, nearly half or 30 out of the total number of geophysical domes or prospects have been brought to light during 1928, and for the most part this year's findings have been made known in the past three months. The extreme southeastern part of Louisiana, in the bays, lakes, waterways and swamps, the biggest geophysical play has been going on. All that territory has been virgin as far as wildcatting is concerned, and it has only been since the first part of the year after Gulf Refining Co. opened a field at Sorrento, east of the Mississippi River, that operators have thought much of going into that district. As it is not at all likely that the long known domes in southeast Texas and southwestern Louisiana have a monopoly on production it is fair to suppose that the oil industry can look to the domes of virgin southeastern Louisiana for a possible duplication of some of the prolific domes in the better known coastal district.

Although, according to the accompanying tables, more than 60 geophysical domes have been located since 1924, counting those which have been checked fairly definitely by at least one instru-

Magnolia Pet. Co.'s No. 12 Dora Roberts, 1,650 ft. N and 330 ft. S of SW cor. Sec. 136, Blk. 29, W.& N. W. Sur. ..... Location.
Magnolia Pet. Co.'s No. 13 Dora Roberts, 2,440 ft. N and 1,650 ft. E of SW cor. Sec. 136, Blk. 29, W.&N.W. Sur. ..... Rigging up standard tools, 2,927 ft.
Magnolia Pet. Co.'s No. 14 Dora Roberts, 990 ft. N and 2,310 ft. W Sec. 157, Blk. 29 ..... Drlg. 2,300 ft.
Magnolia Pet. Co.'s No. 15 Dora Roberts, 2,310 ft. S and W Sec. 157, Blk. 29, W.&N.W. ..... Setting 6-in. casing 3,000 ft.
Magnolia Pet. Co.'s No. 16-D Roberts, 990 ft. N and 1,650 ft. E of SW cor. Sec. 136, Blk. 29, W.&N.W. Sur. ..... Drlg. 1,285 ft.
Marland Prod. Co.'s No. 1 Dora Roberts, SW cor. Sec. 128, Blk. 29, W.&N.W. ..... Drlg. 1,335 ft.
Marland-Texon's No. 5-A Settles, 2,310 ft. N and 330 ft. E of Sec. 135, Blk. 29 ..... Top pay 2,495 ft.; top lime 2,025 ft.; fishing 2,944 ft.
Marland & Group One Co.'s No. 6-A Settles, 2,266.5 ft. S and 2,513.2 ft. E of NW cor. Sec. 6, Blk. 32, Twp. 2s, T.&P. Sur. ..... Location.
Merrick & Bristow's No. 3 D. Roberts, 1,650 ft. E and 330 ft. N of SW cor. Sec. 137, Blk. 29 ..... Drlg. 2,947 ft.
Phillips Pet. Co.'s No. 1 J. Thomas, 330 ft. N and W of SE cor. of Sec. 13, Blk. 33, T-1-N, T.P. Sur. ..... Drlg. 175 ft.
Sun Oil Co.'s No. 3 W. R. Settles, 330 ft. W, 2,310 ft. N of SE cor. Sec. 135, Blk. 29 ..... Set 16-in. casing 250 ft.; oil show 1,800 ft.; oil show 2,345 ft.; 1 bailer per hour 2,345-55 ft.; total depth 2,991 ft.; preparing to test.
Sun Oil Co.'s No. 4 Settles, 330 ft. W and 1,650 ft. N of SE cor. Sec. 135, Blk. 29, W.&N.W. Sur. ..... Building rig.
Taylor-Link Oil Co.'s No. 1 Kloh-Rumsey, 330 ft. N and 2,310 ft. E of SW cor. Sec. 3, Blk. 32 T.&P.R.R. Sur. ..... Top lime 2,131 ft.; swabbing hole full of oil 2,357 ft.; shot 400 quarts 2,260-2,357 ft.; cleaning out.
Texon O. & L. Co.'s No. 1 Quinn, 330 ft. N and W of SE cor. Sec. 11, Blk. 34, Twp. 1s ..... Drlg. 990 ft.
Ward Oil Co.'s No. 3 D. Roberts, 2,310 ft. N and E of SW cor. Sec. 137, Blk. 29 ..... Rig.
Witherspoon & Glasscock's No. 1 Settles, 330 ft. S and 2,970 ft. W, Sec. 6, Blk. 32, T.&P. Sur. ..... Spudded with machine and shut down.

HUDSPETH COUNTY

American Land Co.'s No. 1 Lockhart and Roseborough, C SE Sec. 5, School Blk. 21 ..... Shut down 260 ft.
California Co.'s No. 1 University, 3,821 ft. N and 2,554 ft. E of SW cor. Sec. 19, Blk. E ..... Total depth 150 ft.
Western States Oil Co.'s No. 1 Moore, C SE Sec. 16, Blk. 71, Twp. 6, T.&P. Sur. ..... Straightreaming 2,675 ft.; total depth 2,740 ft.
Western States Oil Co.'s No. 1 Gardner & Moseley, NE NW Sec. 12, Blk. 18 ..... Hole full water 2,945 ft.; underreaming 8¼-in. casing at 2,840 ft.; trying to get water shut off; shut down 3,140 ft.

IRION COUNTY

Central Oil Corp.'s No. 1 Harlan Horney, 1,170 ft. N and 450 ft. W of SW cor. Sec. 3, Blk. 3, H.&T.C. Sur. but in Strip No. 1,026 ..... Shut down 350 ft.
Fuhrman Pet. Co.'s No. 1 J. O. Suggs, Lease 1, C SE Sec. 3,024, Blk. 24, H.&T.C. Sur. ..... Location
Fuhrman Pet. Co.'s No. 1 J. D. Suggs, Lease 2, C SW Sec. 3,029, Blk. 24, H.&T.C. Sur. ..... Location.
Fuhrman Pet. Co.'s No. 1 J. D. Suggs, Lease 3, C SE Sec. 3,009, Blk. 24, H.&T.C. ..... Location.
Kimbrough & Tuel's No. 1 J. M. Nutt, 1,920 ft. S, 200 ft. E of NW cor. Sec. 5, Gonzales Co. School Land ..... Set 6-in. casing 1,360 ft.; show oil and gas; shut down 1,400 ft.
Mertzon Oil Co.'s No. 1 Roach, Sec. 24, 1,380 varas W, 485 varas S of NE cor. Mat Roach Sur. ..... Oil show 1,622-30 ft.; shot 30 qts. 1,522-30 ft.; hole full water; drlg. 2,058 ft.
Signal Oil Co.'s No. 1 Suggs, Sec. 9, Blk. H. T.C.R.R. Sur. ..... Top salt 805 ft.; drlg. 1,850 ft.
Sun Oil Co.'s No. 1 Williams, 1,190 ft. E and 230 ft. N of SW cor. Sec. 39, Blk. 21, H.&T.C.R.R. Sur. ..... Underreaming 1,655 ft.
P. E. Webb et al's No. 1 J. M. Nutt ..... Shut down 2,026 ft.
Wesley West et al's No. 1 J. D. Suggs, SE NW SE Sec. 19, Blk. 7, H.&T.C. Sur. ..... Drlg. 3,285 ft.
C. J. Wrightsman's No. 1 Sawyer, 1,320 ft. from N and W lines Sec. 3,032, Blk. 24, H.&T.C. ..... Location.

JEFF DAVIS COUNTY

J. K. Hughes Dev. Co.'s No. 2 Means, 1,622 ft. N line 600 ft. W line Sec. 345, Blk. 4, H.&T.C. ..... Shut down 3,215 ft.

JONES COUNTY

Atkinson & Sandifer's No. 1 Hudspeth, 300 ft. S of CNL Sec. 22, Miles Sur. ..... Drlg. 2,245 ft.
E. P. Campbell et al's No. 1 Berry, 660 ft. S and E of NW cor. of N 80 ac. of E 160 ac. of N half Sec. 15, Blk. 2, S.P.R.R. Sur. ..... Drlg. 2,520 ft.
Cranfill & Reynolds and others' No. 1 Bickley, 510 ft. N and 150 ft. E of SW cor. Sec. 50, Blk. 18, T.&P. Sur. ..... Drlg. 1,590 ft.
Cosden & Herbert Oil Co.'s No. 1 Bickley, 320 ft. N and 319 ft. E of SW cor. S half of NW Sec. 50, Blk. 18, T.&P. Sur. ..... Rig.
Cosden & Herbert Oil Co.'s No. 5 Bickley, 330 ft. S and 319 ft. W of NE cor. of S half of NW Sec. 50, Blk. 18, T.&P. Sur. ..... Drlg. 2,275 ft.
E. L. Evans' No. 1 S. W. King, Manuel Bueno Sur. No. 197 ..... Shut down 2,015 ft.
Eastland Oil Co. and White Eagle Oil Co.'s No. 1 Derrick, 200 ft. S and W of NW cor. Sec. 53, Blk. 18, T.&P.R.R. Sur. ..... Drlg. 2,800 ft.
McMan Oil & Gas Co.'s No. 1 Bickley, 2,320 ft. W and 1,650 ft. S of NE of Sec. 50, Blk. 18, T.&P. Sur. ..... Drlg. 2,205 ft.
McNeeley et al's, No. 1 Roscoe Bland, 1,175 ft. N and 240 ft. W of SE cor. Sub-Division 20, A-164, DeWitt Co. School Land ..... Rig.
Mook Texas Co.'s No. 1 Creight, 330 ft. S and E of NW cor. of E 100 ac., Scatlorn Sur. A-301 ..... Show oil 2,563-65 ft.; 1,200 ft. water 2,565-89 ft.; shut down 2,570 ft..
Phillips Pet. Corp.'s No. 6 J. R. Walling, 1,635 ft. E and 330 ft. S of NW cor. S half Sec. 19, Blk. 19, T.&P. ..... Estimated 200 bbls. 2,499 to 2,507 ft.
Phillips Pet. Co.'s No. 4 J. C. Mason, 993 ft. N and 330 ft. E of SW cor. W half NE Sec. 18, Blk. 19, T.&P. Sur. ..... Drlg. 2,960 ft.
Phillips Pet. Co.'s No. 1 R. E. Windham, 330 ft. N and W of SE Sec. 17, Blk. 19 ..... Drlg. 2,265 ft.
Richardson Bros.' No. 1 Mrs. M. A. Martin, C E 80 acres, N half Sec. 13, J. Weihl Sur. No. A-468 ..... Shut down 722 ft.
Roberts Oil Corp.'s No. 2 A. T. Smith, 330 ft. N and E of SW cor. 40-acre tract, Sec. 51, Blk. 18, T.&P. Sur. ..... Swabbed 640 bbls., 24 hrs. at 2,491-99 ft.
Roberts Oil Corp.'s No. 3 A. T. Smith, 330 ft. N and W of SE cor. 40-acre tract Sec. 51, Blk. 18, T.&P. Sur. ..... Drlg. 2,240 ft.
Roeser & Pendleton's No. 1 Grayson-B, 320 ft. N and 288 ft. W of SE cor. of J. H. Grayson Sur. 3-A-1,771 ..... 1,000 ft. oil 2,555-60 ft; pulled rig in.
Sinclair Oil Co.'s No. 1 Buckley, 330 ft. S and 319 ft. E of NW N half NE Sec. 50, Blk. 18, T.&P. Sur. ..... Swabbed 20 bbls. per hr. 2,472-77 ft.
Sinclair O. & G. Co.'s No. 2 Buckley, 975 ft. S, 320 ft. E of NW cor. N half NE cor. Sec. 50, Blk. 18, T.&P. R.R. Sur. ..... Drlg. 1,830 ft.
Snowden & McSweeney's No. 2 Bickley, 330 ft. S and 959 ft. W of NE cor. of N half of NW Sec. 50, Blk. 18, T.&P. Sur. ..... Drlg. 2,270 ft.
W. G. Stough et al's No. 1 J. P. Willis, J. C. Patterson Sur. No. 2 ..... Shut down 1,740 ft.
The Texas Company's No. 1 Camp, 330 ft. N and 290 ft. E of SW cor. 194.5-acre tract in Sec. 13, Blk. 19, T.&P.R.R. Sur. ..... Drlg. 1,405 ft.
The Texas Company's No. 2 Carter, 812 ft. N and 320 ft. E of SW of Laura Carter Sur., Sec. 13, Blk. 19, T.&P. Sur. ..... Drlg. 2,350 ft.
Woods & Williams' No. 1 M. A. Parr, about 500 ft. S and E of NW cor. G. A. Kirkland Sur. A-507 ..... Drlg. 860 ft.
W. W. Zingery et al's No. 1 J. T. Thomas, 250 ft. S and 103 ft. W of extreme NE cor. Sec. 13, Blk. 19 ..... Location.

KENT COUNTY

J. S. Cosden & Co.'s No. 1 Wallace, Sec. 56, Blk. 98, H.&T.C. Sur. ..... Shut down 3,015 ft.
Phillips Pet. Co.'s No. 1 Sandell, 330 ft. N and E of SW cor. of SE of Sec. 429, Blk. D, H.&T.C. Sur. ..... Hole full water 3,320 ft.; set 6-in. casing 3,951 ft.; Drlg. 4,160 ft.; hole full water 4,097 ft.
Pursley Ranch Dev. Co.'s No. 1 fee, 300 ft. E and 150 ft. N of SW cor. Sec. 8, Blk. H, H.&T.B. Sur. ..... Location.

KNOX COUNTY

Deep Rock Oil Co.'s No. 1 Moore ..... Shut down 2,495 ft. for repairs.
Deep Rock Oil Co.'s No. 1 Big Four, 1,270 ft. S and 2,500 ft. W of NE cor. Sec. 21, Blk. 4 ..... Shut down 4,516 ft.; hole full of water.

LOVING COUNTY

Lockhart & Co.'s No. 2 Allen, 330 ft. NW and 330 ft. NE Sec. 82, Blk. 33, H.&T.C. ..... Top salt 722 ft.; Drlg. 1,064 ft.
Lockhart & Co.'s No. 1-A Lepp, Sec. 85, Blk. 33 ..... Set 6-in. casing 3,950 ft.; oil show 4,095-4,135 ft.; 250,000 ft. gas cleaning out 4,178 ft.; 2,000,000 ft. gas 4,172-75 ft.; top black lime 4,095 ft.; shut down 4,290 ft.; flows 20 bbls. daily.
Lockhart et al's No. 1 Wheat & Ramsey, 1,650 ft. NW and 900 ft. SW Sec. 83, Blk. 1, W.&N.W.R.R. Sur. ..... Top salt 1,120 ft.; drlg. 3,985 ft.; salt.

MENARD COUNTY

Carpenter & Robbins' No. 1 Kothman, NW cor. SW SW Sec. 22 ..... Shut down 600 ft.
J. C. Barnett and T. H. Drake's No. 1 Callan City Co. Ranch, Sec. 22 ..... Show oil 1,857 ft.; underreaming at 1,865 ft.
Panhandle O. & R. Co.'s No. 1 G. P. Eckardt, C SW Sec. 10, Blk. 2, TW.N.G.R.R. Sur. ..... Total depth 3,002 ft.; top pay 3,001 ft.; 2,000 ft. fluid in hole 1,100 ft.; repairing rig 3,018 ft.
Renfro et al's No. 1 J. Davis, C NW SW Sec. 79, Jacob Brecker Sur. ..... Shut down 950 ft.
Sorrels & Jackson's No. 1 F. Wilhelm, C NE Sec. 6, Blk. C, Brooks & Burleson Sur. ..... Shut down 290 ft.

MIDLAND COUNTY

Shelton et al's No. 1 Kloh & Rumsey, 600 ft. N and E of SW cor. Sec. 13, Blk. 40, T-4-S. T.&P.R.R. Sur. ..... Top salt 1,800 ft.; drlg. 3,905 ft.
Shoup et al's No. 1 Roy Parks, C NW Sec. 34, Blk. 41, Twp. 2s, T.&P. ..... Top salt 1,700 ft.; cem. 8¼-in. casing 2,770 ft.; show oil 3,330 ft.; shut down 4,004 ft.

MITCHELL COUNTY

E. P. Campbell et al's No. 1 Pond, 1,065 ft. W, 660 ft. N of SE cor. Sec. 79, Blk. 27, T.&P. Sur. ..... Shut down 685 ft.
Hucony Gas Co.'s No. 1 C. Weichsel, 2,310 ft. N and 990 ft. E of SW cor. Sec. 78, Blk. 26, T.&P. Sur. ..... Top lime 1,342 ft.; Drlg. 1,575 ft.
Teas & Wheeler's No. 1 Radford, 1,320 ft. N and W of Sec. 1, Blk. 27, T.&P. Sur. ..... Drlg. 1,094 ft.

NOLAN COUNTY

Herbert Oil Co.'s No. 1 Pepper, C of N half Sec. 32, Blk. 22, T.&P. Sur. ..... Show gas 3,160 ft.; hole full sulphur water 3,190-3,202 ft.; shut down 3,303 ft.

PECOS COUNTY

Alexander & Lyle's No. 1 Myrtle Sellman, C SW SE Sec. 20, Blk .Z, T.C. Ry. Sur. ..... Top salt 814 ft.; top lime 1,602 ft.; 3,400,000 ft. gas from 1,611-26 ft.; spraying very little oil; shut down.
George Anderson's No. 1 University, C Sec. 11, Blk. 17 ..... Top salt 1,030 ft.; shut down 1,880 ft.
California Co.'s No. 1 M. A. Smith, Lease No. 1, 990 ft. S and 1,005 ft. E of NW cor. Sec. 21, Blk. 194, H.&G.N. Sur. ..... Location.
California Co.'s No. 5 Smith, Lease No. 1, 2,668 ft. N and 1,355 ft. W of SE cor. Sec. 23, Blk. 194, G.C.&S.F. Sur. ..... Location.
California Co.'s No. 6 Smith, Lease No. 1, 990 ft. N and 1,136 ft. W of SE cor. Sec. 23 ..... Location.
M. C. Dibbie & Hale's No. 1 Bonebrake, Sec. 115, Blk. 8, H.&G.W. Sur., elev. 2,555 ft. ..... Top lime 1,305 ft.; shut down 1,605 ft. for pipe.
Ditto Oil Co.'s No. 1 J. M. Montgomery, Sec. 104, Blk. 331, A16,387 ..... Shut down 600 ft.
Mauch & Kroger's No. 1 Holmes, Sec. 5, Blk. 178, T.C. Sur. ..... Shut down 1,010 ft.
McDonald et al's No. 1 A. A. Parsell, C NW SE Sec. 28, Blk. A, G.C.&S.F.R.R. Sur. ..... Shut down 100 ft.
McCarty Oil Co.'s No. 1 Bennett, 960 ft. S and E of NW cor. Sec. 592, G.C.&S.F. Sur. ..... Location.
Mid-Kansas Oil & Gas Co.'s No. 11 Yates-C, 250 ft. S and 845 ft. E of NW cor. Sec. 60, Blk. 1, I.&G.N. ..... Spudding.
Moncrief & Zoch et al's No. 1 Union Land, C Sec. 35, Blk. 12, H.&G.N.R.R. Sur. ..... Top salt 540 ft.; shut down 1,363 ft.; top lime 1,235 ft.
Pecos Valley Oil Co.'s No. 1 fee, Sec. 22, Blk. 16, H.&G.N. Sur. ..... Set 8-in. casing 1,015 ft.
B. J. Spikes' No. 1 George Brown ..... Shut down 700 ft.
Rio Pecos Oil Co.'s No. 1 Yates, 330 ft. S and E of NW cor. Sec. 543, Blk. 1, H.&G.N. ..... Shut down 410 ft.
Roxana Pet. Corp.'s No. 3 Smith-D, 330 ft. S and E of NW cor. of S half of Sec. 24, Blk. 194, G.C.&S.F. Sur. ..... Drlg. 145 ft.
Roxana Pet. Corp. and Kirby Pet. Co.'s No. 1 University, Sec. 23, Blk. 26 ..... Hole full sulphur water 1,400-50 ft.; shut down 3,070 ft.; 8-in. casing 3,065 ft.; drlg. 3,462 ft.; sulphur water 3,195 ft.; shut down 4,002 ft.
Schumaker et al's No 1 Williams et al, 330 ft. N of middle of S line, Sec. 1, Blk. 117, G.C.&S.F. ..... Spudded and shut down.
Southern C. O. P. Co.'s No. 1 Scharbauer Cattle Co., SW cor. Sec. 21, Blk. 134, T.&S.L. Sur. ..... Show gas 1,455-60 ft.; shut down. 2,964 ft.
Talbot & Ditman's No. 1 Unsicker, 1,320 ft. from E and 660 ft. from S lines, Sec. 25, Blk. 10, H.&G.N. ..... Location
Transcontinental Oil Co.'s No. 1 University, NE NW SW Sec. 18, Blk. 18 ..... Top lime 1,155 ft.; straightreaming 4,130 ft.
World Oil Co.'s No. 1 Kloh, Sec. 47, Blk. 45, Twp. 8, T.P.R.R. Sur., elev. 2,810 ft. ..... Shut down 3,105 ft.

PRESIDIO COUNTY

Eastland Oil Co.'s No. 1 Smith, Cen. Sec. 17, Certificate 463, or Blk. 351, G.C.&S.F.R.R. ..... Location.
Phillips Pet. Co., Empire G. & F. Co., Delmar Oil Co. and C. E. Miller's No. 1 Tootle Est., C NE Sec. 75, Blk. 3, D.&P.R.R. Sur. ..... Fishing 690 ft.
L. C. Brite's No. 1 Lee, Sec. 50, Blk. 12, G.H.&S.A. Sur., center of section ..... Drlg. 2,420 ft.

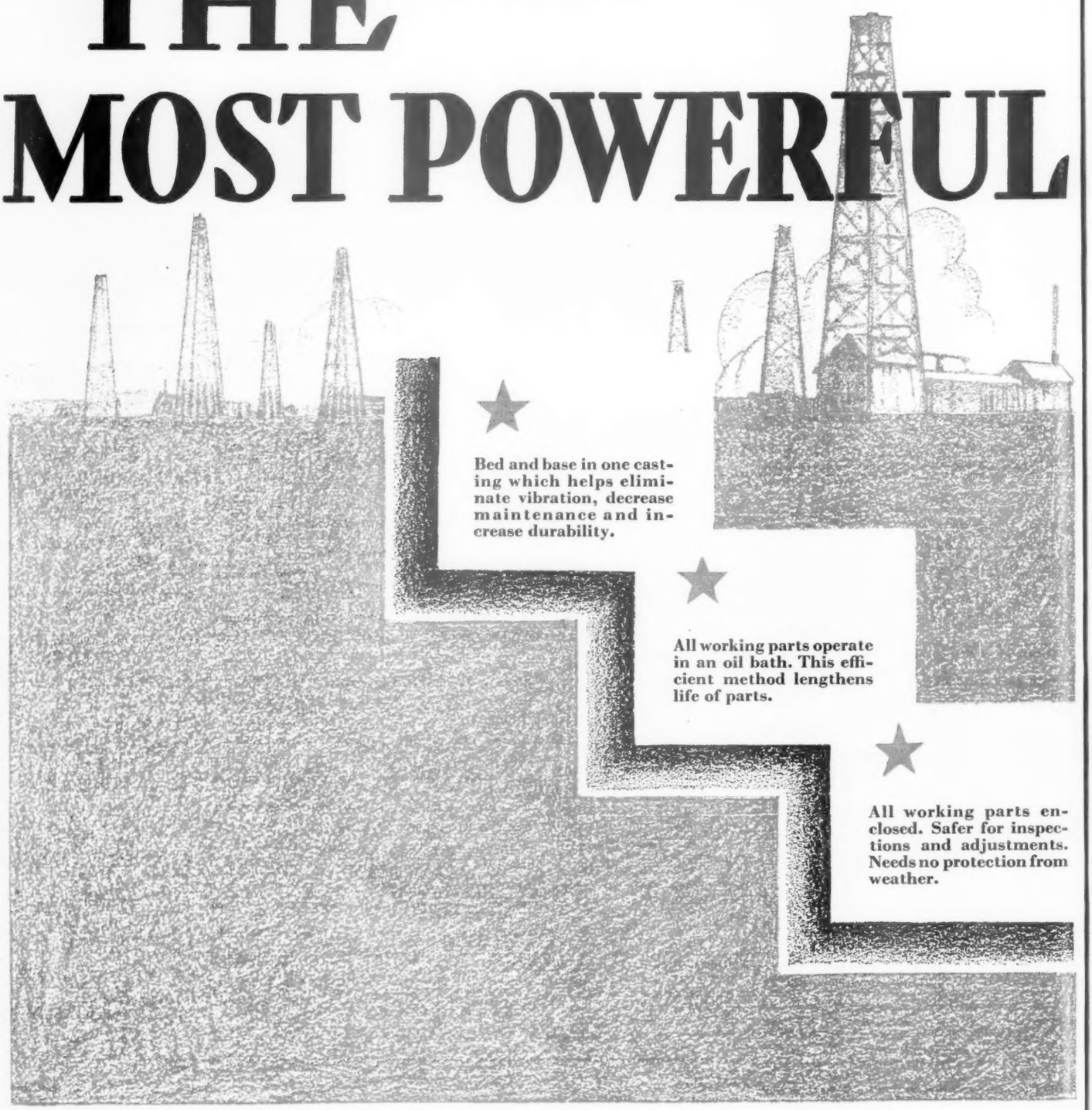
REAGAN COUNTY

Empire Gas & Fuel Co.'s No. 1 Sawyer Cattle Co.-A 4,160 ft. from S line and 320 ft. from W line of Sec. 18, Blk. A, Leonard G. Gee Sur. ..... Top salt 910 ft.; drlg. 1,350 ft.
Texon O. & L. Co.'s No. 1-B University Group 1 ..... Top pay 6,250 ft., hole full of oil; well made two small heads; drlg. 8,400 ft.
Skelly Oil Co.'s No. 3 University, 2,310 ft. N and E of SW cor. Sec. 33, Blk. 8, University Land ..... Drlg. 1,730 ft.; top salt 1,320 ft.

REEVES COUNTY

D. P. Davis et al's No. 1 H. C. McCart, 300 ft. S and 200 ft. W of NE cor. S half NW Sec. 26, Blk. C-18 ..... Shut down 25 ft.

THE MOST POWERFUL



★ Bed and base in one casting which helps eliminate vibration, decrease maintenance and increase durability.

★ All working parts operate in an oil bath. This efficient method lengthens life of parts.

★ All working parts enclosed. Safer for inspections and adjustments. Needs no protection from weather.

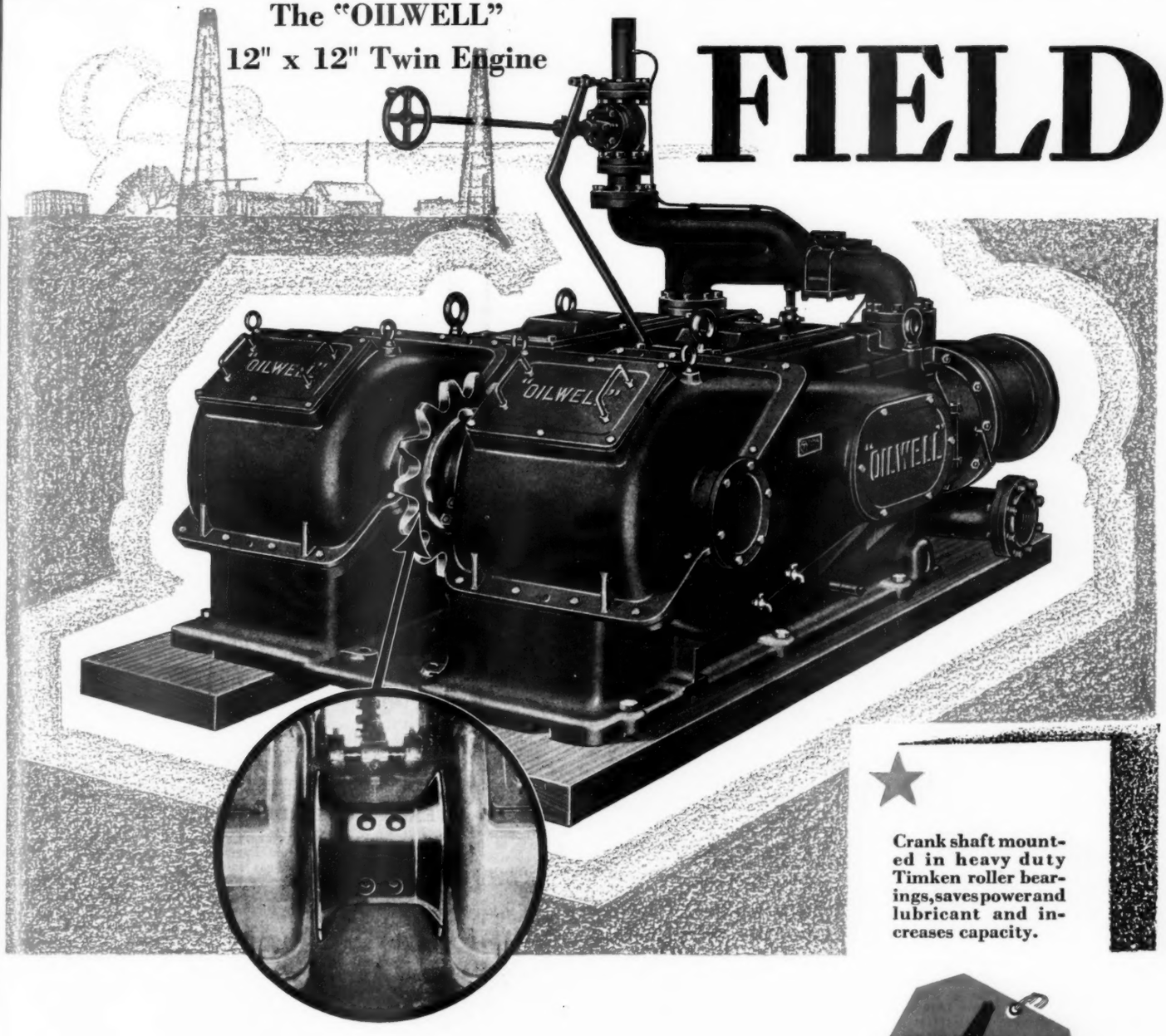
OIL WELL SUPPLY COMPANY

NEW YORK—LOS ANGELES—PITTSBURGH, U.S.A.—SAN FRANCISCO—TAMPICO—LONDON

WORLD'S OLDEST AND LARGEST MANUFACTURERS OF OIL FIELD EQUIPMENT

ENGINE IN THE FIELD

The "OILWELL" 12" x 12" Twin Engine



Crank shaft mounted in heavy duty Timken roller bearings, saves power and lubricant and increases capacity.

The sprocket of the "Oilwell" Engine is cast in two pieces and bolted together. It may be easily removed and replaced by a cathead, which is also split, when the use of such equipment is desirable.

Exploration Co.'s No. 1 A. A. Kinney, 1,500 ft. W of NE cor. Sec. 26, Blk. C-18, Public School Land, elev. 2,847 ft. ... Total depth 2,900 ft.; shut down.
Dr. Kitsis et al's No. 1 Kloh & Rumsey, 330 ft. N and W of SE cor. Sec. 5, Blk. 54, Twp. 5, T.&P. Sur. ... Shut down for 12-in. casing at 150 ft.
David R. Thompson's No. 1 A. A. Eddins ... Swedging csg. 5,658 ft.; pulling 5-in. csg.
World Oil Co.'s No. 1 A. L. Duff, 1,500 ft. from S. 850 ft. from NE. R. S. Johnson Sur. No. 68 ... Elev. 2,774 ft.; total depth 4,515 ft.; plugged back 4,223 ft.; hole full fluid, slopping 1 bbl. of oil daily.

RUNNELS COUNTY

Agnew & Sons, Inc., No. 1 R. R. Russell, in Mrs. H. Holbien Sur. No. 13½ ... Show oil and gas 3,990 ft.; hole full water 4,025 ft.; total depth 4,026 ft.
Gibson & Johnson's N. 1 W. H. Rainwater, 660 ft. N and E of SW cor. of J. H. San Miguel Sur. (cor. location for No. 1 Harris) ... Shut down 2,872 ft.; hole full sulphur water.
R. D. Hamilton et al's No. 1 A. Spill, 1,320 ft. S and W of NE cor. A. Spill 891 acres, out of Thomas R. Webb Sur. No. 358 ... Shut down 100 ft.
Jones Oil Syndicate's No. 1 W. Dale, 212 ft. from N line, 150 ft. from W line Sec. 109, E.T.R.R. ... Shut down 2,245 ft.
McLean et al's No. 1 G. W. Clayton, 150 ft. N line, 270 ft. from W line Sec. 135, E.T.R.R. ... Shut down 1,185 ft.
Nourse & Tilton's No. 1 R. A. Cramer, 200 ft. S. 600 ft. E of NW cor. G.C.&S.F. Sur. No. 2 ... Shut down 100 ft.
Kennedy et al's No. 1 J. E. Tally, 1,200 ft. from N line, 800 ft. from E line Sec. 534, V. V. McKenon ... Shut down 3,007 ft.
R. B. Summers at al's No. 1 J. W. Reese, M. J. Parramore Sur. 26 ... Shut down 1,650 ft.
Union Oil Co. of Nevada's No. 1 W. E. Allen, 1,000 ft. N and W of SE cor. Sec. 1, H.E.&W.T. Sur. ... Drlg 670 ft. (corrected)
Vacuum Oil Co.'s No. 3 McMillan, 561 ft. E of No. 1 Domingo Diaz Sur. ... Pay 2,512-13 ft.; flowed 330 bbls.

SCHLEICHER COUNTY

J. F. Long and O. C. Long's No. 1 W. H. Williams, NE cor. Sec. 28, H.E.&W.T.R.R. Sur. ... Shut down 275 ft.

SCURRY COUNTY

Landreth Prod Co.'s No. 1 Hillmer, 330 ft. N and E of Sec. 75, Blk. 25, H.&T.C.R.R. Sur. ... Top salt 870 ft.; drlg. 2,670 ft.
I. B. Mims et al's No. 1 J. J. Koonsman, Sec. 216, Blk. 2, H.&T.C. Sur. ... Spudded and shut down (corrected).
G. E. Dieckman and R. B. Pender et al's No. 1 F. C. Davis, 1,000 ft. N and 1,770 ft. W of SE cor. of Sec. 275, Blk. 2, H.&T.C. Sur. ... Shut down 350 ft.

STERLING COUNTY

F. & G. Oil Co.'s No. 1 W. L. Foster, C SE Sec. 20, Blk. 12, S.P.R.R. Sur. ... Drlg. 1,050 ft.

STONEWALL COUNTY

Sun Oil Co.'s No. 1 Reynor, 346 ft. S and W NE cor. Sec. 20, Blk. B, H.&T. C. ... Shut down 2,680 ft.

SUTTON COUNTY

Phillips Pet. Co.'s No. 1 A. G. Holman, 2,310 ft. S and 330 ft. W NE cor. Sec. 25, C.C.S.D.&N.G.R.R. Sur. ... Fishing 5,770 ft.
Phillips Pet. Co.'s No. 1 Cusanbary, 2,310 ft. E and 330 ft. S of NW cor. Sec. 39, C.C.S.D.&R.G.N.G. Sur. ... Drlg. 150 ft.

TAYLOR COUNTY

Burnham et al's No. 1 A. M. Y. X. ... Spudded and shut down.
Grisham-Hunter Oil Corp.'s No. 1 T. L. Stevens, 220 ft. S and E of NW cor. Sec. 53, Blk. 19, T.P. Sur. ... Fishing bit 1,890 ft.
Hurley Oil Co.'s No. 1 Mrs. A. R. Payne, 330 ft. N and E of SW cor. E 80 acres of NW Sec. 52, Blk. 19 ... Fighting cave 685 ft.

TERRELL COUNTY

Big Bend Oil Co.'s No. 1 Bassett, C NW Sec. 155, Blk. D, M.-K.-T.R.R. ... Spudded and shut down.
Champlin Ref. Co.'s No. 1 Corder, C Sec. 110, Blk. 1, C.C.S.D. Sur. ... Cem. crevice 3,535-40 ft.; shut down 3,552 ft.
Keck Pecos Trust Co.'s No. 1 Hamilton, C Sec. 6, Blk. D-7, E.L.&R.R. Sur. ... Shut down 1,749 ft.
Mrs. J. B. McPhee's No. 1 Sam Belt, Cen. Sec. 78, Blk. D-7, E.L.&R.R. Sur. ... Location.
Milham Exploration Co.'s No. 1 Bassett, Sec. 76, Blk. Y, W. E. Robertson Sur. ... Cem. 6⅝-in. casing 3,986 ft.; cem. cave 4,140 ft.
Woodley & Jones No. 1 Pankenham, C SE NW Sec. 43, Blk. B-2, C.C.S.D.&N.G.R.R. Sur. ... Shut down 150 ft.

TERRY COUNTY

Kingsland O. & P. Co.'s No. 1 Brownfield, C NW SW SW Sec. 7, Blk. 1-A, E.L.R.R. Sur. ... Shut down 4,430 ft.

TOM GREEN COUNTY

Collins et al's No. 1 Jones, CSL Sec. 646, Shaffer Sur. ... Shut down 1,800 ft.
Fitzgerald & Taliaferro's No. 1 Bennett, C SW Sec. 1,628, E. H. Ringer ... Shut down 1,920 ft.
F. P. Green et al's No. 1 fee, 575 ft. from N and 1,450 ft. from W lines Sec. 165, District 11, S.P.R.R. Co. Sur. ... Shut down 1,066 ft.
McLaughlin & Ridge's No. 1 R. Q. Holder, 3,140 ft. N and 80 ft. W SE cor. J. P. Parker Sur. (3,000-ft. test) ... Show gas 1,757-59 ft.; shut down 3,005 ft.; hole full water 2,986 ft.
Tinker et al's No. 1 D. J. Jones, 150 ft. N and 4,250 ft. W of SE cor. J. J. Schaefer Sur. 646 ... Shut down 1,800 ft.
Tulsa Oil Co.'s No. 1 Adams, C SW Sec. 163, Blk. 11, S.P.R.R. Sur. ... Shut down 1,050 ft.

UPTON COUNTY

Champlin Oil & Ref. Co.'s No. 4 J. F. Lane, 990 ft. from S, 330 fet. From W line of SE Sec. 2, G.C.&S.F. Sur. ... Total depth 1,940 ft.; flowed 30 bbls.
Gulf Prod. Co.'s No. 7 J. F. Lane, 990 ft. N and 326 ft. W of most southerly SE cor. of their 160-acre tract Sec. 3, G.C.&S.F. Sur. ... Drlg. 1,860 ft.; top salt 475 ft.
Keck Investment Co.'s No. 1 H. L. McClintic, 330 ft. S and W NE cor. Sec. 206, Blk. F, C.C.S.D.&R.N.G. Sur. ... Drlg. 1,745 ft.; top salt 1,100 ft.

VAL VERDE COUNTY

Independent Operators' No. 1 Whitehead, SE SE Sec. 30, Blk. 4, I.&G.N. Sur., elev. 1,175 ft. ... Drlg. 4,400 ft.
O. G. Owens' No. 1 Mills, Sec. 128, Blk. 1, I.&G.N. Sur., elev. 2,130 ft. ... Gas sand 2,491-2,520 ft., tested 125,750 ft. gas; reset 8-in. 2,511 ft.; shut down 4,210 ft.
Producers Oil Co. et al's No. 1 Everett Bros., 2,310 ft. S and 330 ft. E of NW cor. Sec. 40, Blk. DB, C.C.S.D.R.G.N.G. Sur. ... Spudded and shut down.
W. B. Thraves et al's No. 1 W. E. Wilson, 6,830 ft. N NE cor. Sec. 1, T.&P., thence 1,680 ft. E Sec. 115, Blk. E, G.C.&S.F. ... Show oil and gas 1,655 ft.; shut down 1,215 ft.
Valvert Oil Corp.'s No. 1 Bassett, C NE Sur. 47, Blk. Y ... Set 15½-in. casing 767 ft.; fishing 1,204 ft.

WARD COUNTY

Denver P. & R. Co.'s No. 1 Cherokee Land & Investment Co., 990 ft. from NEL and 2,310 ft. from SEL Sec. 215, Blk. 34, H.&T.C. Sur. (4,000-ft. test) ... Set 8¼-in. casing 2,505 ft.; top salt 2,755 ft.; drlg. 4,520 ft.; anhydrite.
E. B. Lovelace et al's No. 1 Redman, 1,980 ft. NE of SW line and 1,980 ft. SE of NW line, Sec. 162, Blk. 34, H.&T.C.R.R. ... Spudding and shut down.
Prairie Oil & Gas Co.'s No. 1 Sealy Estate, 1,320 ft. S and W Sec. 95, Blk. A, G.M.M.B.&A. Sur. ... Top salt 1,073 ft.; 5,000,000 ft. gas 2,526 ft.; gas decreased to 2,000,000 ft. at 2,637 ft.; drlg. 2,820 ft.; anhydrite and lime.
Rector Oil Co.'s No. 1 Johnson, 1,150 ft. NW, 5,610 ft. NE, Sec. 10, Blk. 32, H.&T.C. ... Top salt 745 ft.; show oil 1,495 total depth 2,085 ft.; drlg. by tools.
Shipley et al's No. 1 Hazlett, 2,310 ft. NE and 2,310 ft. SE Sec. 17, Blk. 5, H.&T.C. ... Top salt 727 ft.; drlg. 2,405 ft.
Talbot, Dittman & Atlantic O. P. Co.'s No. 1 Dorr, 1,320 ft. from SE line and 660 ft. from SW line of Sec. 9, Blk. 5, H.&T.C. R. R. Sur. ... Location.
Talbot et al's No. 1 Riddle, 330 ft. S and W of Sec. 90, Blk. 5, H.&T.C.R.R. Sur. ... Rigging up.

WINKLER COUNTY

Atlantic O. P. Co. et al's No. 2 Daugherty, 2,310 ft. N and E of SW cor. Sec. 3, Blk. 74, Public School Land ... Top lime 2,668 ft.; cem. 8¼-in. casing 2,673 ft.
Atlantic O. P. Co.'s No. 1 Hendricks-H, 2,310 ft. N and 1,650 ft. W of SE cor. Sec. 30, Blk. B-5, School Land ... Top lime 2,785 ft.; set 8¼-in. casing 2,788 ft.; preparing to test 2,874 ft.; 2,000 ft. oil in hole; drlg. 2,947 ft.
Amerada Pet Corp.'s No. 1 L. Daugherty, 2,310 ft. N and W of SE cor. Sec. 3, Blk. 74, Public School Land ... Top lime 2,648 ft.; cem. 8¼-in. casing 2,653 ft.
V. T. Bolin et al's No. 2 Brown, 2,000 ft. S and W of NE cor. Sec. 4, Blk. B-5, Public School Land ... Rigged up rotary and shut down.
Barnsdall Oil Corp.'s No. 1 Tobe Morton, 330 ft. N and E of SW cor. Sec. 26, Blk. B-12 ... Drlg. 1,440 ft.; anhydrite.
Barnsdall Oil Corp.'s No. 2 Tobe Morton, 1,650 ft. N and 330 ft. E of SW cor. Sec. 26, Blk. B-12 ... Building rig.
Cranfill & Reynolds' No. 1 Hendricks-F, 660 ft. S and 2,310 ft. E of NW cor. Sec. 16, Blk. 26 ... Drlg. 2,430 ft.; top salt 1,985 ft.
Cranfill Bros. & Pickrell's No. 1 Hutchins, 2,310 ft. N and 330 ft. E of SW cor. Sec. 47, Blk. 26 ... Cem. 8¼-in. casing 2,285 ft.; top lime 2,280 ft.; 2,000,000 ft. gas 2,290 ft.; cem. 6⅝-in. casing 2,636 ft.; drlg. 2,850 ft.
Culberson Bros.' No. 1 Hendricks, 1,650 ft. N and W of SE cor. Sec. 40, Blk. B-5, School Land ... Shut down 1,880 ft.
Empire Gas & Fuel Co.'s No. 2 Daugherty, 330 ft. N and 2,310 ft. E of SW Sec. 3, Blk. 74 ... Location.
Empire Gas & Fuel Co.'s No. 3 Daugherty, 330 ft. N and 990 ft. E of SW cor. Sec. 3, Blk. 74 ... Location.
Empire Gas & Fuel Co.'s No. 1-B Daugherty, 2,310 ft. S and 990 ft. W of NE cor. Sec. 3, Blk. 74 ... Location.
Flandell & Co.'s No. 1 Carter, 640 ft. S, 330 ft. W Sec. 26, Blk. B-3. ... Set 12½-in. casing 272 ft.; shut down 400 ft.
Gulf Prod. Co.'s No. 1 O'Brien, NW cor. Sec. 31, Blk. F. ... Drlg. 1,356 ft.
Independent O. & G. Co.'s No. 3 McCabe, 990 ft. S and 2,310 ft. W of NE cor. Sec. 36, Blk. B-5, School Land ... Top salt 950 ft.; top lime 2,296 ft.; oil show 2,515 ft.; drlg. 2,748 ft.
Magnolia Pet. Co.'s No. 1 Scarborough, 2,310 ft. S and 990 ft. E Sec. 1, Blk. C-22 ... Drlg. 1,340 ft.; top salt 1,122 ft.
May Prod. Co.'s No. 1 Hendricks, 1,320 ft. N and 2,310 ft. W of SE Sec. 34, Blk. 26, Public School Land ... Top lime 2,449 ft.; set 6⅝-in. casing 2,455 ft., oil show 2,710 ft.; shut down 2,881 ft. for orders; hole full oil.
Prairie Oil & Gas Co.'s No. 1 E. W. Cowden, 2,310 ft. N and 339 ft. E of SW cor. Sec. 3, Blk. B-12 ... Top lime 2,455 ft.; cementing 8¼-in. casing 2,475 ft.; fishing 2,648 ft.
Prairie Oil & Gas Co.'s No. 2 Cowden, 1,320 ft. N and 330 ft. E of SW cor. Sec. 3, Blk. B-12 ... Cem. 8¼-in. casing 2,518 ft.
Prairie Oil & Gas Co.'s No. 3 Cowden, 2,200 ft. N and 990 ft. E of SW cor. Sec. 3, Blk. B-12 ... Location.
Prairie Oil & Gas Co.'s No. 1 Leck, 330 ft. S and 2,310 ft. E of NW cor. Sec. 16, Blk. 74 ... Moving in material.
Prairie O. & G. Co.'s No. 2 Leck, 330 ft. S and 2,310 ft. W of NE cor. Sec. 16, Blk. 74 ... Location.
Prairie Oil & Gas Co.'s No. 1 Martin, 330 ft. N and 1,650 ft. W of SW cor. Sec. 27, Blk. B-12 ... Cellar.
Roxana Pet. Co.'s No. 1 Daugherty, 2,310 ft. S and W of NE cor. Sec. 3, Blk. 74 ... Rigging.
Roxana Pet. Co. et al's No. 2 Lum Daugherty., 2,310 ft. S and 1,650 ft. W of NE Sec. 3, Blk. 74 ... Location.
Simms Oil Co. and Southwest O. P. Co.'s No. 1 George Sealey, 2,434 ft. S and 330 ft. W of NE cor. Sec. 50, Blk. F ... Cellar.
Southern C. O. P. Co.'s No. 3 Hendricks T-67-2-D, 1,650 ft. S and 330 ft. W of Sec. 28, Blk. 26 ... Cem. 12½-in. casing 468 ft.; top lime 2,639 ft.; total depth 2,654 ft.; shut down for pipe.
Southern C. O. P. Co.'s No. 3 Hendricks T-88-T, Sec. 34 Blk. 26, Public School Land ... Top lime 2,452 ft.; set 8-in. casing 2,473 ft.; drlg. 2,974 ft.
Southern C. O. P. Co.'s No. 1 Hendricks T-88-D, 2,310 ft. N and 330 ft. W of SE cor. Sec. 4, Blk. B-12, Public School Land ... Topped lime 2,486 ft.; cementing 8¼-in. casing 2,495 ft.; drlg. 2,662 ft.
Southern C. O. P. Co.'s No. 2 Hendricks T-88-R, 1,320 ft. N and 330 ft. E of SW cor. Sec. 27, Blk. 26 ... Top lime 2,300 ft.; cem. 2,320 ft.; bailing casing 2,320 ft.
Southern Crude Oil Co.'s No. 1 Hendricks, T-88-Q, 440 ft. N and 330 ft. E of SW cor. of N½ Sec. 27, Blk. 26 ... Rigging up rotary.
Southern C. O. P. Co.'s No. 3 Hendricks T-89-C, 2,310 ft. N and W of SE cor. Sec. 35, Blk. B-5 ... Rigging up rotary.
Southern C. O. P. Co.'s No. 3 Hendricks T-90, 2,210 ft. N and 330 ft. W SE cor. Sec. 47, Blk. 26 ... Top lime 2,329 ft.; set 6⅝-in. casing 2,751 ft.; top pay 2,795 ft.; shut down 3,060 ft. flowing 150 bbls. daily gauge.
Simms Oil Co. and Southwest O. P. Co.'s No. 1 George Sealey, 2,434 ft. S and 330 ft. W of NE cor. Sec. 27, Blk. B-12 ... Location.

TEXAS PANHANDLE WILDCATS

(Continued from Page 43)

Delmar Oil Co.'s No. 1 F. Foster, NW cor. SW, Sec. 55, Blk. B-2, H.&G.N. Sur. ... Show oil; 4,000,000 ft. gas 2,835-97 ft; T.D. 3,757 ft; to plug back to 2,950 ft. and shoot.
Eslick & McKinney's No. 1 Mrs. Hopkins, 330 ft. from NE, E ¼ NE, Sec. 84, Blk. B-2, H.&G.N. Sur. ... Rig.
Sines & Reiger's, formerly Eslick et als' No. 1 Mrs. J. A. Hopkins, NW cor. W 80 acres of SW, Sec. 84, Blk. B-2, H.&T.C. Sur. ... S.D. 3,208 ft.
Ezell et als No. 1 J. M. Bell, SE cor. NW, Sec. 183, Blk. B-2, H.&G.N. Sur. ... Rig.
Get Oil Co.'s No. 1 LeFors Townsite, 765 ft. from E line and 1,397 ft. from S line, being center of Lot 16, Blk. 5 ... Derrick.
Gulf Prod. Co.'s No. 6 J. B. Bowers-A, 330 ft. S and E of NW cor. W ½ Sec. 89, Blk. B-2, H.&G.N. Sur. ... Drlg. 589 ft.
Gulf Prod. Co.'s No. 3 Holmes-A, 330 ft. N and E of SW cor. W½ SE, Sec. 87, Blk. 3, I.&G.N. Sur. ... Top lime 2,321 ft.; drlg. 2,372 ft.
Gulf Prod Co.'s No. 1 McLarty, 150 ft. N and 462 ft. W of SE cor. NE, Sec. 2, Blk. 1, A.C.H.&B. Sur. ... Drlg. 2,380 ft.
Gulf Prod. Co.'s No. 1 Saunders, 990 ft. N and 330 ft. E of SW cor. Sec. 3, Blk. 1, A.C.H.&B. Sur. ... Drlg. 1,180 ft.
Gardner Bros. et als' No. 1 Ball, 323 ft. from N line and 330 ft. from E line of W 156.3 acres of N½, Sec. 3, Blk. B-2, H.&G.N. Sur. ... Flowed 85 bbls. 2,696-2,741 ft.; tools stuck 2,748 ft.
Gardner, Collins et als' No. 1 Saunders, 330 ft. each way from NE cor. of S 49 acres of W 100 acres, Sec. 3, B.&B. Sur. ... Rig.
Landreth Prod. Corp.'s No. 1 Langham, SE cor. E 79 acres of N½, Sec. 1, Blk. 2, H.&G.N. Sur. ... Shot with 80 qts. 2,688-2,786 ft. and flowed 130 bbls.
LeFors Pet. Co.'s No. 3 Shaw, 990 ft. S and 375 ft. E of NW cor. T. Leach Sur. ... 30,000,000 ft. gas 2,075-2,340 ft; oil pay 2,631-43 ft; salt wtr. 2,655-60 ft; made 300 bbls. fluid 50% wtr.
LeFors Pet. Co.'s No. 3 Shaw, 288 ft. from N line and 1,091 ft from E line of T. Leach Sur. ... Drlg. 1,850 ft.

ment, 11 have proved out by the drill to be domes, these including the five productive domes of Orchard, Allen, Nash, DeWalt, Fannette, Starks, Sorrento, Loreauville (Lutcher), East Hackberry, and Bayou Bouillon, and 6, which so far have been unproductive commercially, namely, Hawkinsville, Clemens, Long Point, Lost Lake, Moss Bluff, Davis Hill, Calcasieu Lake, Vermillion Bay, Thibodaux, White Castle, Black Bayou and Napoleonville.

While only slightly over a sixth of these salt domes have proved out domes, the majority of the others are such new discoveries that little if any drilling has been done. In fact of the 42 geophysical domes which so far have not proved out by the drill as salt domes, only 3 have had tests drilled on them although 4 out of the remaining 39 undrilled dome prospects have first tests now drilling.

Hastens Development

It is interesting to note that out of the 39 domes known previously to the advent of the geophysical instrument, 27 have been found commercially productive, which is slightly over 68 per cent. And, while it took years of drilling sometimes to find the production on these domes, in the space of just a few years nearly half of the known domes discovered geophysically have proved commercial fields.

This brings up a point on the efficiency of geophysical instruments not only to locate the domes but to check up to a large extent the contour which will enable wildcatters on these geophysical dome prospects to open up production on them much more rapidly than it took to prove the old domes productive. Of the 10 productive geophysically discovered domes, 3 were proven as oil fields within the fourth test, and those domes on which production was not found so readily were among the first prospects discovered and before the present efficiency of the instruments. That all the newer domes being brought to light will be proved up as readily and with a minimum of drilling is virtually certain.

Whatever production is discovered on these geophysical domes, however, probably will not provide the sensational developments as on some of the earlier coastal domes as the majority of these new domes are being checked and leased by the large companies, either entirely by one company or by several companies as a unit. This will prevent anything but a systematic development of these domes, and on some drilling may not be started for several years.

HARRY HUBBELL DIES SUDDENLY IN NEW YORK

Russell Harry Hubbell, for many years president of Hill, Hubbell & Co., and the originator of many improvements in methods used for protecting pipe lines from corrosion, died suddenly in his rooms in the Biltmore Hotel, New York, Sunday morning, November 4, from heart disease.

Among the more notable achievements of Mr. Hubbell during his 25 years' connection with the manufacture of protective coatings, are the use of oil burning heater equipment for preparing hot coatings, and his recent introduction of coating and wrapping machines for the protection of pipe lines, the work being done in the mill or on the line, depending upon whether the pipe to be protected is new or reconditioned.

Less than 30 days ago the announcement was made of a merger of Mr. Hubbell's company with eight other well known paint companies on the Pacific Coast, the consolidation being known as the General Paint Corp., of which Mr. Hubbell was vice president in charge of the Eastern Division.

Mr. Hubbell is survived by his widow who resides at San Francisco, to which city his body is being taken from New York City accompanied by E. S. Browning, district manager in charge of Hill, Hubbell & Co.'s Tulsa office, who was with him at the time of his death. Funeral services will probably be held the latter part of this week. Mr. Hubbell was 49 years of age.

STILL GREATER IMPROVEMENTS ARE RECOMMENDED FOR OIL EXPOSITION

Although the International Petroleum Exposition of 1928 marked distinct advances over its predecessors, still more important improvements are forecast for future shows by J. Burr Gibbons, who served as general manager in 1927 and 1928. Increased parking facilities, a bigger restaurant, more comfort and service facilities, rearrangements of open-air space, covered walks, segregation of noisy machinery, shed roof over outside space, a heating system, new administration building and greater attention to foreign exhibits and to the marketing division of the oil industry are on the program which Mr. Gibbons says should be adopted.

Although the parking facilities for exhibitors this year were an immense improvement over those of previous years, they were taxed severely and Mr. Gibbons says an ideal solution of the parking problem would be duplication on the north side of the Texas Building of the present arrangement. While the facilities in all lines were infinitely better than last year, nevertheless the need for more telephones, toilet arrangements, rest rooms, etc., is apparent. Mr. Gibbons suggests installation of several pay telephones in each building, with attendants to help exhibitors and others in transmission of messages.

Rearrangement of Open-Air Space Urged

Mr. Gibbons strongly urges rearrangement of the open-air exhibit space for greater utilization and easier access, with concrete walks in all aisles and walkways now unpaved, this work to be done under the direction of a competent engineer. At least a part of the open-air space, he says, particularly the east half of the grounds between the Texas and Oklahoma Buildings and west of the Arcade, should be placed under a shed roof, to eliminate weather hazards, produce a uniform display of engines and operating equipment and obviate the expense of buildings, the use of inflammable tents and tarpaulins.

The presence of obnoxious gases and the noise of engines, motors and moving equipment are distasteful to some visitors, besides presenting a handicap to exhibitors of quiet lines who cannot compete with the clatter of machinery in trying to discuss their exhibits with prospects. Mr. Gibbons would end this difficulty by confining all noisy exhibits to one building.

The international character of the exposition should be expanded, in the opinion of Mr. Gibbons, attendance of foreign delegates being supplemented by foreign exhibits. "In two years," said Mr. Gibbons, "I believe it would be possible to get exhibits from every oil producing country in the world, with proper help from the Federal Government and other important agencies. Mexico and Russia had small educational exhibits this year, and if there had been time, we would have had a rotary outfit from Switzerland. The marketing end of the petroleum business should be represented by manufacturers of pumps, buildings, tank wagons, storage equipment, etc."

Many Requests for Space

Continuation of the exposition as an annual event is urged by Mr. Gibbons, who says that while many exhibitors will not show annually, there are some 3,600 concerns in the United States who could profit by participation in this kind of show. If only 10 per cent of them came in once in 10 years the exposition each year would be comparable with that of 1928 in size. An unusual number of exhibitors expressed a desire for space next year. Some wanted to sign contracts. Contracts could not be made for various reasons, including uncertainty of dates and duration of the next exposition, possible change in the cost of space, necessity for rearrangements of grounds, etc.

A relief fund for old-time oil men who in their declining years find themselves without home or money, Mr. Gibbons suggests as a use for profits ultimately expected to accrue from the oil shows. "Sympathy and human understanding are characteristics of the men who make up the great oil fraternity," he said. "It would be a splendid thing if the exposition could prove to be the agency through which the veterans and pioneers of the industry might receive shelter, medical, financial aid and finally avoid the potters field."

FRED M. PRESCOTT DIES IN MENOMINEE, MICH.

Fred M. Prescott, president of the Prescott company, internationally known manufacturer of pumping equipment and sawmill machinery, died at his home in Menominee, Mich., October 17. He was born in Denver, Colo., September 30, 1863.

The passing of Mr. Prescott is a severe loss to Menominee. He was prominently interested in all activities tending to the welfare and development of the city, and his time and money were always involved in any movement for the good of the community. He was president of the Prescott Company, a director of the First National Bank, a past president of the Menominee Rotary Club, a member of the Riverside Country Club, and was its president when that club was reorganized about six years ago. Other clubs throughout the country with which Mr. Prescott was affiliated are the Engineers Club of New York City, the Hydraulic Club of New York, the Milwaukee Club of Milwaukee, Wis., and the Kitchi Gamme Club of Duluth. His fraternities included the Kappa Alpha Society of Cornell University and the Masonic order.

Mr. Prescott was a member of the American Society of Mechanical Engineers, New York; the board of managers of the same society from 1905 to 1908; the Cornell Alumni Association, being the first president of the Milwaukee Cornell Alumni; the Lake Superior Mining Institute and the board of control of the Michigan College of Mining and Technology. His alma mater was Cornell from which he graduated in 1885.

The Prescott company of Menominee, Mich., has been builded on strong foundations, and the business will be continued by sons and brothers of the late head of the firm.

SHREVEPORT MARKET

SHREVEPORT, La., Nov. 4.—Refined oil prices in both Shreveport and El Dorado markets remained unchanged this week from the quotations given the week before except in two instances. U. S. Navy, quoted in El Dorado last week at 9¼ to 9½ strengthened on the latter and kerosene quoted a week ago at 6¼ to 6⅜ weakened to 6⅛ to 6¼. Gas oils were unchanged at 3 cents and distillates 3¼ to 3½. Fuel oil, except for one refiner's quotations of 85 cents for a higher grade product, remains at 75 to 80 cents.

In Shreveport there were no changes U. S. Motor 9½, kerosene 6¾, gas oil 3 to 3¼ and fuel 70 to 80 cents. Scarcity of kerosene was made more so by one refiner withdrawing all his kerosene and gas oil output from the market and running it to storage against completion of a pipe still unit to be ready for operation next spring.

New Gas Corporation Organized to Serve Communities in Utah

PITTSBURGH, Pa. Nov. 3.—Organization of the Western Public Service Corp., the new company that will serve Southern Idaho and Central Utah with natural gas and which has been sponsored by the Crawford interests of this city, the Ohio Oil Co. and Prairie Oil & Gas Co., was effected at a meeting of these interests here.

The meeting brought to Pittsburgh a group of distinguished oil and gas men. Included were O. D. Donnell, president of Ohio Oil Co., and N. K. Moody, president of Prairie Oil & Gas Co.

Western Public Service Corp. is a holding company that has been formed under the law of Delaware to control several operating companies. The plans call for the construction of a 350-mile pipe line from Wyoming to Salt Lake City, Utah. The holding company will have a capital stock of 2,000,000 shares of no par value.

Officers follow: Chairman of the board, George W. Crawford of Pittsburgh, who is also chairman of the board of Columbia Gas & Electric Corp.; president, O. D. Donnell, president of Ohio Oil Co.; vice presidents, N. K. Moody, president of Prairie Oil & Gas Co.; L. B. Denning, president of Lone Star Gas Corp.; R. J. Berry, vice president of Ohio Oil Co.; T. B. Gregory, vice president of Columbia Gas & Electric Corp.; treasurer, T. B. Gregory; secretary, D. E. Mitchell; assistant secretary and assistant treasurer, E. B. Redpath and F. B. Firman.

The board of directors will consist of O. D. Donnell, R. J. Berry, M. N. Poe, L. Fitzpatrick, all of Ohio Oil Co.; N. K. Moody, W. S. Fitzpatrick, John Fertig, L. R. Crawford, all of Prairie Oil & Gas Co.; G. W. Crawford, T. B. Gregory, F. W. Crawford and L. B. Denning, representing the Crawford group.

All of these officials were present with the exception of W. S. Fitzpatrick and L. Fitzpatrick.

J. S. ANDERSON DIES

OIL CITY, Pa., Nov. 5.—John S. Anderson, aged 59, died suddenly at his home near Limestone. He was superintendent of Pew station operated by the Peoples Gas Co.

MID-CONTINENT REFINERY RUNS HIGH

(Continued from Page 34)

Texas Petroleum Products Co., Somerset	1,500	500	500
Wickett Refining Co., Wickett	2,500	(†)	(†)
Total	89,250	59,050	58,220

*Shut down.
†The Wickett Refining Co. operates with tops secured from the Bluebonnet Refining Co. The plant during November will handle approximately 900 bbls. of tops daily.

REFINERY OPERATIONS IN NORTH LOUISIANA
(Plants which have been in operation during the past year)

Name and location—	Daily capacity	Runs Nov. 1	Runs Oct. 1
Bayou State Refining Co., Hosston	700	700	250
Crystal Oil Refining Corp., Shreveport	14,000	9,000	9,000
Dixie Oil Co., Superior	3,000	2,500	2,500
Louisiana Oil Refining Corp., Shreveport, Bossier	24,000	26,000	18,000
Shreveport Producing & Refining Co., Shreveport	8,000	8,500	8,500
The Texas Company	6,000	5,000	6,000
Total	55,700	45,700	44,250

†Topping.

REFINERY OPERATIONS IN ARKANSAS
(Plants which have been in operation during the past year)

Name and location—	Daily capacity	Runs Nov. 1	Runs Oct. 1
Henry H. Cross Co., Smackover	5,500	5,100	5,000
Houston Oil Co., Camden	3,000	2,200	2,100
Kettle Creek Refining Co., Pearson	5,000	4,500	5,000
Lion Oil & Refining Co., El Dorado	12,000	7,000	7,100
Macmillan Petroleum Products Co., El Dorado	1,800	1,600	1,600
Ouachita Valley Refining Co., El Dorado	2,000	1,000	1,000
Root Refineries, El Dorado	5,500	4,000	3,550
Simms Oil Co., Smackover	3,000	2,800	2,600
Total	38,800	28,200	37,850

No Stuck Valves **MERCO** **No Leaky Valves**

TRADE MARK

Lubricated Plug

Permanent Seal

Always easy to turn

Special Lubricant in Stick form

Wide Range of Sizes

Ask for Catalog

Merco Nordstrom Valve Co.

Subsidiary of The Merrill Company

Engineers.... Manufacturers

BOSTON—184 Boylston St. NEW YORK CITY—11 W. 42nd St. CLEVELAND—Engineers Bldg.
CHICAGO—Midland Bldg. NEW ORLEANS—Masonic Temple Bldg. HOUSTON—Petroleum Bldg.
DALLAS—Magnolia Bldg. SAN FRANCISCO—343 Sansome St. LOS ANGELES—Union Bank Bldg.

Factories: Oakland, Calif. and Belleville, N. J. *Agencies in Principal Cities*

NORDSTROM VALVES

CENTRAL WEST FIELDS

(Continued from Page 72)

Section 32, the gas being found between 762 and 770 feet in depth. In Crawford Township, same county, the Ohio Fuel Gas Co.'s No. 1-3,210 on the Eliza Schlagel, Section 7, was a very light gasser. This well had only slight showings at from 4,022 to 4,050 feet and at from 4,056 to 4,094 feet.

In Summitt County, Franklin Township, the East Ohio Gas Co. has an excellent gas well on the J. C. Baum, Section 27. Same company is drilling a second test on the Artha Development Co.'s property, Section 8, Richfield Township, same county.

In Licking County, Perry Township, Koontz and Schultz made a nice strike in their No. 4 on the Joseph Chaney, Section 1, which is credited with an initial production of 75 bbls. from sand at from 2,846 to 2,892 feet. No. 5 same lease is starting up. Settles Oil Co. found a light gas well at No. 3 on the Jacob Lothers, Section 7, at from 791 to 800 feet. H. C. Farmer drilled a light gas well at a test on the H. H. Hoover, Section 7, at from 670 to 680 feet, and is now drilling No. 1 Albert Ashcraft, Section 2, and No. 1 on the John Claggett, in Section 4. Whitehill Gas Co. is drilling No. 5 on the Albert Ashcraft, Section 2. The Preston Oil Co. made five new locations, Nos. 8, 9 and 10 on the James Wright, Section 16; No. 1 Ollie Lear, Section 15, and No. 1 on the G. C. Mauk, Section 18. In Fallsbury Township, the same company has started drilling a test on the N. E. Norris, Section 10, and Brown and others have made a location for No. 9 on the George Chapin, same section. In Hanover Township, the Wehrle Gas Co. is drilling a test on the Merl Dodson, Section 32. Heisey Gas Co. made a location for a second test on the William Wallace, in Licking Township. George H. Long is drilling No. 5 on his own farm, Section 24, Madison Township.

Muskingum County

In Muskingum County, Jackson Township, Lantz & Meade drilled a dry hole in No. 4 on the Roy Baughman, Section 16, at from 775 to 797 feet. Ohio Fuel Gas Co. made a location for No. 3 on the George W. Shaw, Section 13, Muskingum Township. Hope Construction & Refining Co. staked a location for No. 3 on the Joseph Varner farm, in Hopewell Township. Same company made a location for a second test on the Alunda Butler, in Licking Township. William Kline and others are drilling a test on the Ira Spring, Section 2, Clay Township.

In Athens County, Dover Township, the Structure Oil & Gas Co.'s test on the M. L. Stratton, Section 35, is a fairly good gas well at from a depth of 3,716 to 3,747 feet. Ohio Fuel Gas Co. is drilling No. 1-3,299 on the Ohio Colliers Co., Section 24. In Ames Township, same company made a location for No. 5-3,338 on the J. E. Gifford, Section 2. Fox & Mosure made a location for a test on the T. R. Phillips, Section 13, same township. In Carthage Township, the Logan Gas Co.'s No. 1-3,021 on the Eliza Weisenbach, Section 26, has been given up a dry hole at a depth of 1,767 feet. The showing of oil and gas was soon exhausted in the hole. Same company made a location for No. 4-3,047 on the Lulu W. Tedrow, in fractional Section 23. In Berne Township, Smith and Thomas got a 4-bbl. pumper in the Peeker sand at 116 feet in No. 4 on the C. C. Curtis, Section 33. Ohio Fuel Gas Co. is drilling No. 1-3,327 on the J. E. Gilchrist, Section 29, and made a location for No. 1-3,345 on the Lewis J. Elliott, Section 36, also for No. 5-3,346 on the Charles E. Elliott, Section 29, and for No. 10-3,339 on the Black Diamond Coal property, in Section 23. McBride and others are drilling a test on the L. M. Wright, Section 24. In Athens Township, Gross and others brought in a good gas well in a test on the C. M. Higgins, Section 20. The gas was found in the first Berea sand at from 1,177 to 1,182 feet. In Lodi Township, the Ohio Fuel Gas Co. made locations for No. 1-3,340 on the George King, Section 7, and No. 1-3,341 on the R. O. Burson. In Troy Township, same company made a location for No. 1-3,343 on the Charles Cole, Section 35.

In Meigs County, Sutton Township, the Pure Oil Co.'s second test on the William J. Krater, Section 19, is reported good for only about 1 bbl. a day from the first Berea sand from 1,802 to 1,816 feet and drilled to a total depth of 1,822 feet. Same company is drilling No. 2 J. F. and A. B. Ham, Section 20. Tyree and others are drilling a second test on the Joseph Stobart, Section 12, and No. 5 on the H. D. Carnahan, Section 11. The Ohio Fuel Gas Co. is drilling deeper its No. 4-2,460 on the State of Ohio property. In Bedford Township, same company's No. 1-3,241 on the Herbert Barnhart, Section 27, is a light gas well in the second Berea sand at from 1,732 to 1,754 feet. S. Edwards and others are drilling a second test on the W. B. Chaney, Section 22. Tyree and others made a location for a test on the Stanley Holter, Section 13, Salisbury Township.

Jackson County

In Jackson County, Franklin Township, the Ohio Fuel Gas Co. is drilling No. 2-3,331 on the J. E. Hines, Section 2, and in Lick Township is drilling No. 10-3,263 on the J. A. Ford, Section 23, also drilling No. 1-3,282 on the Blanch E. Neary, Section 12, Coal Township.

In Vinton County, Brown Township, the Atha Drilling Co.'s test on the Lewis P. Drayer, in fractional Section 36, got 24 feet of broken sand in the Clinton lime at from 3,201 to 3,225 feet and went to a total depth of 3,311 feet.

In Stark County, Lawrence Township, the test of Cashdollar and others on the George Seifert, Section 4, has been given up as a failure at a total depth of 3,941 feet, not having enough gas volume to make a commercial producer.

In Lawrence County, Mason Township, the Wittmer Oil & Gas Co. is drilling a test on the George Witrock, Section 31. In Gallia County, Addison Township, the Atha Drilling Co. is drilling a test on the E. Ramsey and L. Lane, Section 20.

In Rush Creek Township, Fairfield County, the Ohio Fuel Gas Co. is drilling No. 2-3,307 on the Cora L. Shaw, Section 4.

Guernsey County

In Guernsey County, Knox Township, the Ohio Fuel Gas Co. has an average gas producer at No. 1-3,252 on its fee property, Section 23. Top of lime in this well was found at 3,304 feet and total depth 3,316 feet. In Cambridge Township, the Home Oil Co.'s No. 1 on the William Healey, Lot 13, produced 13 bbls. initially from a depth of 3,416 to 3,426 feet. Gordon Oil Co. made a location for a test on the Virgil Ross, Lot 7, and Ferguson & McCullough made a location for No. 1 on the Dr. D. A. Craig, Lot 13. In Valley Township, the Buffalo Oil Co.'s test on the John McCune, Lot 4, is a fair gas producer from the Berea sand which was topped at 1,180 feet, pay sand from 1,183 to 1,186 feet, and total depth 1,188 feet. Ohio Fuel Gas Co.'s No. 1-3,324 on the J. W. Keller, Lot 24, was dry in the Berea sand at 1,185 feet, where salt water was encountered. In Jackson Township, the Leonard Oil & Gas Co.'s test on the Elliott W. Solliday, Lot 16, was dry. Berea sand was topped in this well at 1,171 feet, water at 1,206 feet and gas at from 1,231 to 1,331 feet, but not in marketable quantity.

In Morgan County, Marion Township, the Ohio Fuel Gas Co. has a very light gas well at No. 1-3,280 on the Carrie L. Smith, Section 29. The gas was found in the second Berea sand at from 1,663 to 1,657 feet and drilled to a total depth of 1,663 feet. Lord, Shaw and Dye's No. 6 on the Charles W. and Rose Newton, Section 24, is also a light gas well in the same formation, the Berea grit being found at from 1,581 to 1,600 feet and drilled to 1,604 feet. Hollowell and others are drilling No. 5 on the Rettie Syphers, Section 18, and the Ohio Fuel Gas Co. is drilling No. 3-3,234 on the C. D. Dugan, Section 24. In Penn Township, the same company is drilling No. 1-,3304 on the Ada Harper, Section 2.

(Continued on Page 96)

A

FLUID PACKED PUMP

FPP

once used,
becomes the pet hobby
of every operator

Pick out an operator who is using a Fluid Packed Pump on a well and try to switch him away from it on his next one. You'll hear something like: "No siree; not on your life. It's nothing but Fluid Packed Pumps for my wells from now on." It's warmth of regard like that which proves that the Fluid Packed Pump is a star performer for everyone. Fluid Packed Pumps reduce rod jobs, reduce rod breakage, require less power and run easy on the power, reduce emulsification and are dependably efficient under all conditions of extremely light or heavy oil, sand, shale, heat or water.

Manufactured only by the Fluid Packed Pump Company, Los Neitos, California. Distributed in the Mid-Continent by Robert N. Atmore Company, Tulsa, Oklahoma.

We are also Mid-Continent Distributors for the Shaffer Line of Tools and Tools in General. We can deliver the Olinda Type Casing and Tubing Head and the Shaffer Flow Bean. You can find nothing better than the Shaffer Flow Bean in regulating production to meet production proration requirements.

You Get More From Atmore

ROBERT N. ATMORE COMPANY

FLUID PACKED PUMPS

NATIONAL TUBING HOIST

Type "BJ"

THE NATIONAL SUPPLY COMPANIES

Descriptive Bulletin No. 14N. On Request

EQUIPMENT AND SUPPLIES

BOATS SAIL DIRECT TO SOUTH AMERICAN PORTS

The oil and its allied trades doubtless are more familiar with the rapid strides being made in Venezuela and Colombia than any other industry in the United States. The major oil companies drilling in these republics encounter difficulty in instances in getting delivery of machinery and oil field equipment and field supplies. It has happened that some company was obliged to discontinue drilling, waiting arrival of supplies and equipment from the United States. The great problem has been that of moving immediately and with dispatch equipment direct from the manufacturer to the unloading docks at Maracaibo, Venezuela, and at Cartagena, Colombia.

A steamship service from Texas and other Gulf ports direct to Venezuela and Colombia is promised by the Gulf-Caribbean Steamship Line, Inc., in November of this year. The incorporators are W. L. Conover, J. R. Aston and J. S. Gissel of Houston, Tex. Mr. Conover recently returned from a trip to Venezuela, Colombia and the Dutch West Indies, where agencies for the new line were arranged.

Most of the oil field equipment and supplies are now moving through the port of New York. Shipments moving from Gulf ports to Maracaibo, Venezuela, the chief oil center, are shipped through either San Juan, Porto Rico, or Curcacao, Dutch West Indies. The Gulf-Caribbean line will make sailings direct to Maracaibo. The Gulf-Caribbean line with main offices in Houston, proposes to provide a semimonthly sailing to the ports of LaGuayra, Puerto Cabello and Maracaibo in Venezuela; Curacao, Dutch West Indies, and to Puerto Colombia and Cartagena in Colombia. A monthly sailing will be maintained direct to Maracaibo.

TRADE LITERATURE RECEIVED

A bulletin issued by Wilson-Snyder, Pittsburgh, Pa., is devoted to high-pressure, high-temperature transfer pumps and high-pressure refinery pumps for charging and testing high-pressure stills.

A 20-page booklet published by the American Manganese Steel Co., Chicago, presents the history and uses of Fahralloy, a series of alloys having nickel and chromium in their analyses.

A booklet just printed by the P. L. & M. Co., Los Angeles, Calif., features Blackor, described as a "super hard-facing material." It also has prepared a folder describing the new Borway bit, a six-way drilling tool.

The latest number of the Columbian Crew, published by the Columbian Rope Co., Auburn, N. Y., tells of various uses of its products.

Bulletin No. 25, mailed by the Connersville Blower Co., Connersville, Ind., describes and illustrates two new features of design which are being applied to Connersville rotary positive blowers and gas pumps.

Interesting uses of Laschen wire rope are illustrated in the current number of the Hercules Record, published by A. Leschen & Sons Rope Co., St. Louis, Mo.

The D. O. James Manufacturing Co., Chicago, has just completed its speed resending out a new catalog, No. 1,900, ducer catalog No. 166, which describes, illustrates and lists planetary spur, heavy-duty worm, medium-duty worm, and herringbone speed reducers.

The Sullivan Machinery Co., Chicago and New York, has prepared a bulletin describing its portable electric hoists. The double-drum hoist for scraper loading service supplements the company's "Turbinair" models.

ONLY ONE ADJUSTMENT NEEDED BY SAND-REEL

The Marion heavy-duty chain-driven sand reel is a complete self-contained sand reel mounted on a steel frame, ready to bolt down on sills. The drive sprocket wheels are keyed to the crankshaft. The clutch has only one adjustment, which is easy to make. The manufacturers, the Marion Machine, Foundry & Supply Co., Marion, Ind., describe this sand reel as perfectly balanced for deep wells and high speed. Other machines which have prominent places among this company's products are the Marion heavy-duty band wheel power with force feed oiling system, the Marion roller-bearing crown-block sheave and the Mariondyer speed spool.

MADE CALIFORNIA AGENT

The K-P Straight Hole Bit Co. of Los Angeles, has been appointed exclusive agent for California for the sale of the K-P bit manufactured by the Kennedye-Plumb Corp. of Philadelphia and St. Louis. C. B. Kennedye, president of the Kennedye-Plumb Corp., has been in California for several months going over the requirements for this district and making tests with the K-P bit. The K-P Straight Hole Bit Co. of Los Angeles will be under the management of Daley G. Bevis, formerly of the Brown-Bevis Co. R. H. Clemmons is sales manager and Leo Craig is representing the company.

CRISTITE AND DYMON-X TO BE SOLD NATIONALLY

The Victor Oxy-Acetylene Equipment Co. of San Francisco, has arranged with the General Alloys Co. of San Francisco, to market nationally the abrasion resistant metal "Cristite." "Cristite" is a result of over three years of experimentation and laboratory and field test of the General Alloys Co. By a new patented process, permitting the alloying of metals never before combined, a new metal has been compounded, free from cobalt, of maximum hardness, cohesiveness, toughness and attrition resisting.

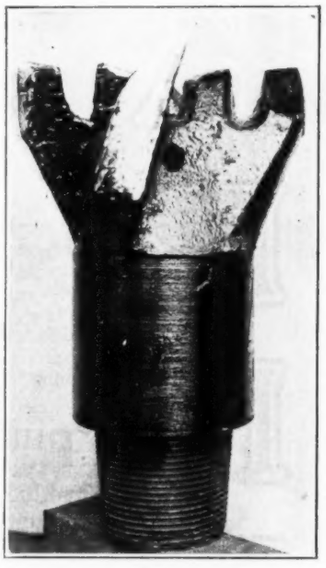
"Cristite" is produced in several series. Series No. 1 shows an average scleroscope hardness of 92.8 in casting and 101.17 after application. This is said to be the highest registered scleroscope point ever obtained by any hard facing material, excepting the new diamond substitute, "Dymon-X," which is also to be marketed nationally. "Dymon-X" can be applied with the oxy-acetylene torch.

SMITH & LESLIE INCORPORATE

A. J. Smith, E. H. Leslie and associates have been incorporated as Smith & Leslie for the engineering and construction of petroleum refineries, refinery equipment and natural gasoline plants; for consultation as engineers and chemists and for other similar service. The general offices and laboratories will be maintained in Oil City, Pa., and a western office will be kept in Kansas City, Mo.

SMITH COMPANY MAKING NEW TYPE DRILLING BIT

Another new type Smith drilling bit has been introduced by the H. C. Smith Manufacturing Co., Inc., at its new plant in Los Angeles, Calif. Research work by Smith engineers, coupled with field tests has produced this latest drilling bit, designed to make satisfactory hole footage



in all formations, particularly in extremely hard or tough formation.

The bit is similar to the conventional four-way drilling bit, except that all four cutter blades are "out to gauge" insuring that the desired gauge of the hole will be maintained. Two of the blades extend radially inward about half way to the center. The other set of blades has a serrated feature noticeable in the illustration decreasing the friction of the bit on the bottom of the hole and allowing the bit to dig more easily.

Five holes provide ample outlet for the circulation, one leading each cutter blade and one in the center of the bit. The body of the bit is of sufficient length to help steady itself and drill a straight hole.

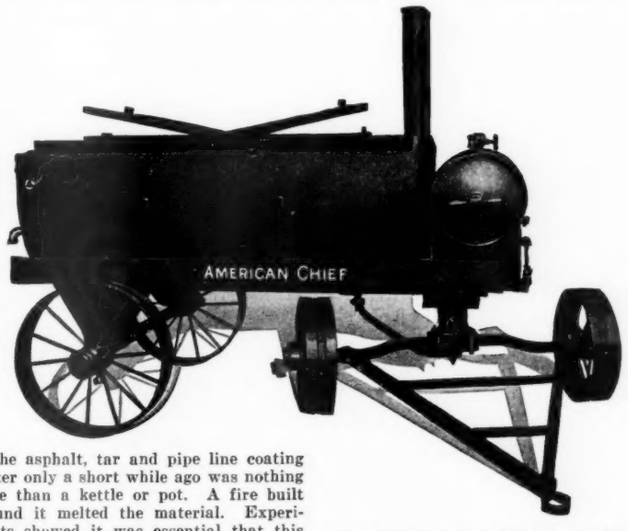
NEW LINE PRESSURE PIPE

Naylor Spiralweld Toncan iron pipe, made by the Naylor Pipe Co., Chicago, has been designed for the economical conveyance of oil, air, gas or water. It is a new pressure line pipe made of Toncan iron, a highly refined alloy, to resist the ravages of rust and corrosion under trying conditions. It is manufactured by winding strip Toncan iron spirally on a lathe-turned arbor, locking and electrically welding the seams to provide maximum structural strength for all working pressures, as well as light weight for ease of handling, and a smooth inside to reduce frictional resistance.

NEW APPARATUS INSTALLED

Distillation apparatus developed by Dr. Walter J. Podbielniak is being installed by the inventor in the research laboratory at Long Beach, Calif., to be used for the fractionating of gasoline, gas and vapor samples. The Podbielniak apparatus will be operated by W. R. Davis, Jr., under the direct supervision of H. N. Wade, research engineer for J. A. Campbell.

HEATER DESIGNED FOR PIPE LINE COATING WORK



The asphalt, tar and pipe line coating heater only a short while ago was nothing more than a kettle or pot. A fire built around it melted the material. Experiments showed it was essential that this bituminous material be melted in the right way and at the right temperature. Overheating destroys the coating which causes it to crack and peel off after it has been applied. Also direct spot heat causes the lower melting properties of the material to be separated and rise to the top, leaving the heavier properties in direct contact with the bottom of the vat or kettle, which cokes and burns, greatly lowering the melting capacity and destroying the coating that is being melted.

R. M. Soper, manager of the asphalt equipment department of the American Steel Works at Kansas City, Mo., is the designer of a new and improved asphalt, tar and pipe line coating heater.

With the improved heater the material being melted is broken down in the same even temperature in which it was blended or blown at the factory. This also has increased the melting capacity of the new and improved heaters and adds life to the equipment.

With the oil-burning indirect-heating unit the heat is always under control and the material is kept at the proper temperature for application. The new heaters carry construction of perfect spring mounting on wide-face roller-bearing wheels, which enable them to carry the maximum load with ease. All-steel construction reduces the weight and enables quick repairs to be made.

A half circle antisplash percolating inside heater vat keeps the material in constant movement while it is being melted. This makes for perfect blend.

VALVES
PIPE FITTINGS
FIRE HYDRANTS

KENNEDY

THERE'S a large factor of safety built into each Kennedy product. Besides designing for strength to withstand exceptional service conditions, every Kennedy Valve is tested to far more than the pressure for which it is guaranteed before being permitted to leave the factory. This is one of the many reasons why Kennedy Valves stand up in services that cause failure of other types, and why so many Kennedy Valves are still in use after a quarter century or more of service.

A suitable type and size of valve for every producing, refining and pipe line service is included in the extensive Kennedy line, and each Kennedy design has proven its effectiveness of control, economy of maintenance, and dependability of operation in petroleum industry installations.

Send for the Kennedy Catalog.

THE KENNEDY VALVE MFG. CO., ELMIRA, N.Y.

WAREHOUSES: New York, 128-132 White St.; Chicago, 1335-1337 So. Clinton St.; San Francisco, 448-450 Tenth St.

SALES OFFICES: New York, Boston, Philadelphia, Cleveland, Chicago, Atlanta, Salt Lake City, El Paso, Los Angeles, San Francisco, Seattle.

CENTRAL WEST FIELDS

(Continued from Page 93)

Sutton Brothers have a light gas well at No. 9 on the Charles S. Williams, Section 14, in the second Berea at from 1,419 to 1,441 feet and total depth 1,490 feet. Same parties are drilling No. 4 on the Ida Hotchkiss, Section 10. Henning Brothers are drilling No. 24 on the Ada Harper, Section 2. In Union Township, Van Fossen & Scott have a very light gas well at No. 29 on the Charles Harrison, Section 11, the oil coming from the coal measure at from 184 to 188 feet in depth.

Indiana

Only two completions were reported from the Indiana fields, one being a small producer and the other a duster. The dry hole was reported near the Ohio state line in Monroe Township, Allen County, by unknown parties.

In Blue Creek Township, Adams County, George S. Lacknett's test on the S. C. Tinkham, Section 28, is a 5-bbl. pumper from the Trenton limestone.

In Monroe Township, Randolph County, T. O. Thorp abandoned Nos. 1 and 2 W. H. Baker, Section 16, and No. 1 Christian Baughn, same section, while C. F. Chapman pulled out old Nos. 1 and 2 on the J. Meeks, Section 17.

In Gibson County, in the southwestern part of the State, in Barton Township, Bell Brothers are drilling a test on the H. Schumacher farm, Section 17, and Randall and Rodgers are starting a test on the John Williams, Section 5, same township. The Roxana Petroleum Corp. is drilling its second test on the Ranford Corn farm, Section 22, Columbia Township, same county, where No. 1 came in a big gas well measuring a volume of 5,700,000 feet at a total depth of 1,425 feet.

In Pike County, Clay Township, A. B. Bement is starting a test on the N. N. Davidson farm, Lot 12, and in Logan Township, H. C. Darby and others are drilling a test on the Edna Fowler, Section 26.

The Wiser Oil Co. is drilling No. 2 on the J. B. Richardson, west 40 acres, in Section 27, Luce Township, Spencer County.

Jake Smith, well known oil operator of Toledo, left for Francisville, Pulaski County, Indiana, where he will superintend the drilling in of the wildcat well on the Bennett Taylor farm, Section 17, Salem Township, over a mile southwest of Francisville.

Illinois

Work is showing a slight pickup in the old Robinson Field in Illinois. In Licking Township, Crawford County, M. E. Harris and others' test in the southeast corner of the Millard Payne 24 acres, in the southeast quarter, Section 2, pumped 4 bbls. at a depth of 895 feet. In Robinson Township, the Associated Producers Co.'s No. 52 on the S. D. Meserve heirs, Section 9, pumped 5 bbls. Karns, Scheeongas and others are drilling a test on the Ira Walters, Section 20. In Southwest Township, the Silurian Oil Co.'s test in the southwest corner of the Lloyd Mann, in the northeast quarter, Section 24, proved to be a dry hole at 1,585 feet. The Dark Bend Oil Co. also got a dry hole at a second test on the J. D. and F. L. Price, same section. In Oblong Township, the Dinsmoor Oil Co. is starting a test on the M. C. Stentz, Section 23.

In Petty Township, Lawrence County, the Ohio Oil Co.'s No. 11 on the Warren Westall is a 25-bbl. producer at 1,510 feet. Same company is drilling No. 5 H. L. Mefford No. 1 farm, Section 25, and No. 5 on the F. M. Green, same section. Phipps, Blosser and others are drilling No. 5 on the Wesley Clark, Section 2, Dennison Township.

In Sugar Loaf Township, St. Clair County, the Ohio Oil Co.'s test, 1,520 feet from the north line and 200 feet from the east line of the Joseph Reichert, in Section 3, was dry at 773 feet, with only a slight showing of oil.

A test is being drilled by the Benoist-Finn Oil Co. on the Sam Finn farm, Section 16, Haines Township, Marion County, in the old Sandoval area.

In Wabash Township, Wabash County, the Mount Carmel Oil Co. is drilling No. 8 F. M. Leet, Section 1; Boeger Oil Co. is drilling No. 2 L. G. Stillwell, Section 12; Tracy Heirs Oil Co. is drilling No. 4 Tracy heirs, same section; Joe S. Young, Jr., and others are drilling No. 1 Collison heirs, same section, and Kneipp and others are drilling No. 1 George Ramsey, Section 4.

GAS SANDS BENEFITED BY SIMPLE TREATMENT

(Continued from Page 69)

less the shell was on bottom and tamped with a small amount of water which could not be removed. The first shots have been followed by second and third shots of 10 quarts without material increases in the volume. These follow-up shots were placed either at the same point or above or below the initial shot, and although a small additional increase was noted in some instances, it only lasted for a short time after the explosion. This action has led to the conclusion that one small shot, properly placed, is all that is necessary for correcting the loss in volume in the type of well considered.

Nitroglycerin was selected for the explosive agent with the idea that quick burning was desirable to prevent too great a loss in force up the open hole. A well-known authority on well shooting (C. O. Rison of the Indian Territory Illuminating Oil Co.) has suggested that a solidified glycerin would be more effective for conditions in these wells. While this has not been tried, it should be at least as successful, and would not have the handling hazards of nitroglycerin.

Cavings Rarely Found

Cavings were rarely found in the well when the work was begun. The hole was bailed dry and the gas volume released by the shot was sufficient to clean the well of broken sand fragments. In all cases where the volume was increased to 1,000,000 feet or more, all debris was blown out through the casing and expense of a clean-out with tools was eliminated.

The data collected from shooting indicate that the effect of the shot was to give a new sand face without materially shattering the sand. Figure 2 shows samples of sand which were blown from a well immediately after the shot. The dark portion is the face that was exposed in the hole, and the light portion shows where the fragment was freshly broken from the sand body. The exposed face shows dark because of a layer of silt, one-sixty-fourth of an inch thick, which had been deposited during the years of operation of the well. This silt had practically closed the pores of the sand to the passage of gas, and is interpreted as the reason for the decline in volume.

The small amount of caving after the shots indicates that there was only a slight shattering of the sand. Not more than 2 cubic feet of debris could be found in any well that was shot. After the wells were placed in operation, some caving has been noticed, but not enough for evidence that the sand was badly broken up.

If this is the true interpretation of the effect of shooting, the silt deposit is the sole cause of the rapid volume decline, and any method to eliminate this silt deposit will be beneficial to the gas well. The appearance of the silt on the sand was such as to suggest that it had been filtered from suspension similar to the action which occurs when a sand is mudded. However, this mud sheath must have been built up slowly, and so effectively sealed into the pores, possibly with some binding by mineral salts, that the flow of gas could not break it loose.

The experience on a large number of wells has shown that whenever a back flow of gas occurs, with fluid in the hole, there is an appreciable loss of open flow volume. This effect was most noticeable when the wells were new, probably because of the fine particles from drilling that cling to the casing and are not blown out. Effect of back flow has been known for some time, and methods used to pre-

at back flow into dry gas sands have en uniformly successful in preventing normal volume declines. There are ny clear examples to sustain this view.

Fusing Action

Specimens "c" and "d" in Figure 2 are amples of the fusing action of nitro-cerin in a hole free from fluid. A 10-art shot was exploded opposite a me-um grained, subangular, consolidated, artz sand in the well from which these ecimens were blown. Sample "c" is a y porous mass in which the sand ains cannot be distinguished. Sample " shows patches of similar material ached to a piece of torpedo shell. hether the fused sand was from the rmation or came from the jack squib not be definitely stated, but conclu-ons as to the effect need not take this to consideration.

A microscopic examination of the spec-en shows over 90 per cent crystalline rticles surrounded by an amorphous der. This small percentage of isotropic ed material shows that the heat of e shot was rapidly dissipated, and only ipient fusion occurred. The interpore terial was evidently affected while the d grains were unchanged by the heat the explosion.

The practical application of this evi-nce is that it eliminaes the fear of mage from fusion in the wells shot. ry few fused pieces were recovered, d all those found had more than twice e porosity of the virgin sand. This con-ion on the sand face would not be ob-tionable. The possibility that most of e fused material is actually loosened the shot aids in disregarding any ideas at a melted quartz sand face may have sulted from shooting. The indications high temperatures cannot be entirely erlooked, and low fusing formations y be unfavorably acted upon by the t of a shot. These will undoubtedly rare instances, however.

Flow Factors

A selection of wells to be shot can best made by an examination of their de-ne. The volume naturally falls off with e pressure, so a special "volume-factor" as originated for comparison purposes. is is defined as the open flow in mil-ons of cubic feet divided by the shut-in essure in pounds per square inch abso-te. In wells which had been deepened was necessary to consider the sand face posed, and when this was included, the m was designated as "flow factor." e relation of the initial volume-factor any other volume-factor was the index the sand conditions. The "flow fac-" was used in a like manner, and was pecially valuable in comparing wells in e same pool. A volume-factor can be ed in a variety of places. The initial ctor can be multiplied by the rock pres-re in 100 pounds per square inch abso-te at any time in the life of the well get an approximation of what the vol-e should be if sand conditions had not anged. The variations of the wells can easily seen by plotting these figures. e "flow factors" can be used for di-ctly comparing two wells or types of lls, and have been used for more ac-rately mapping zones of high porosity sand bodies. They are the indices that ow changes in a gas sand and make or sand conditions conspicuous.

These factors were used without as-ming that they should remain constant roughout the life of a well. The laws gas flow through sand would of course ve the exact determination of their lues, but it was found that these fac-rs varied in range from changes in sand nditions to the extent that any varia-on of the factor from a constant value uld be disregarded without serious ror.

Volume Factor Curve

Figure 3 shows the volume-factor curve r the well in Figure 1. A use of the ctors can be shown by correlating the rve to the history of the well. It is to especially noted how clearly the anges in the sand condition are brought t.

The curve shows that sand conditions re best when the well was drilled in. e immediate and marked decline of this indicator curve is significant of the period when the sand was becoming affected. The low point in December, 1927, is at the time when fluid was not properly handled in addition to the clogging of the sand. The slight increase and greater stability shown by the curve during the next year was brought about by the use of a jetted siphon line which permitted removal of fluid from the well and aided in the prevention of back flow of fluid into the sand.

Shooting of the well in January, 1928, caused a marked increase in the volume-factor, and raised it close to the figure which the well had reached after the first drop from the high peak of initial flow conditions. The maintenance of the volume after shot is well shown in the curve, and gives an idea of the lasting and beneficial effects that were obtained.

More consistent and more slowly declining volume in the past two years of this well's history is typical of the results obtained on most of the wells. Careful operation of the wells, more exact methods of caring for the water, and institution of new ideas in pressure control of deliveries, have been valuable in sustaining the volume of similar wells by preventing injury to the sands. A more technical consideration of gas production early in a well's life will lessen the necessity for shooting to increase volume later, but at present a large portion of wells are in a condition where a shot will be beneficial. There will probably never be a time when all injuries to a sand can be prevented, and there will always be some wells in a condition to be benefited by a process of shooting similar to the one described.

Conclusions

In a great many gas wells, the partially depleted sand may be profitably rejuvenated by shooting.

Shooting in a dry hole is especially adapted to this work and is simple, safe and inexpensive.

Careful attention to wells will prove beneficial in preventing injury to gas sands, and more profitable operations will result.

MEXICAN SHIPMENTS LESS IN SEPTEMBER

MEXICO CITY, Mexico, Nov. 2.—(By Trens Agency)—According to unofficial figures petroleum exports from Mexico in September showed a decrease from August shipments. Of 15 companies considered as regular shipping companies, 7 reported increases and 7 reported decreases. The Moctezuma Terminal Co. made no shipments in either month. The increases were not sufficient to counterbalance the decreases and a total falling off of nearly 90,000 bbls. was reported.

The shippers reporting increases were La Corona, the Huasteca, New England Fuel Oil Co., The Texas Company of Mexico, Pierce Oil Co., Imperio and Mexican Atlas. Those reporting decreases were the Mexican Gulf Oil Co., El Aguila, Panuco Boston Oil Co., Transcontinental-Rayon, Mexican Sinclair, Penn Mex Fuel Co. and Mexican Oil Products Co.

Comparative export figures for August and September, in barrels, follow:

Companies—	August	September
Huasteca	638,037.10	768,861.07
Aguila	608,238.00	491,415.00
Transcontinental (Rayon)	484,221.71	466,320.00
Mexican Gulf	183,759.02	65,751.31
Rayon	149,533.81	.....
Mexican Sinclair	113,758.35	61,659.01
Panuco-Boston	71,028.17	.....
Imperio	68,446.74	84,026.82
Penn Mex	58,800.00	.....
Corona	49,004.81	229,885.44
Mexican Atlas	46,118.00	51,341.35
Pierce	5,111.49	52,296.84
Mexican Oil Products	4,745.56	.....
The Texas Company.	.....	54,505.89
New England	.....	64,773.18
Total	2,480,802.76	2,390,834.91

MOVES TANKS TO COLEMAN

MEXIA, Tex., Nov. 3.—Atlantic Oil Producing Co. is cutting down three 55,000-bbl. capacity tanks in the Mexia and Wortham area and shipping them to Coleman County in the Ranger district. Atlantic company is soliciting connections in the light oil district.

Here's real help to meet your sulphuric acid problems

Every oil refinery will be interested in these facts about Barberite, the new high copper bronze alloy. Barberite immersed in 16% and 60% sulphuric acid at room temperature for one year in laboratory tests showed no corrosion loss. And no loss in 16% sulphuric acid at 96° C (205° F) for 100 hours. In 60% sulphuric acid, same temperature and same time, the loss was negligible.

Developed through extended research, Barberite is the final selection from a group of more than 200 alloys developed and tested. Being a high copper bronze alloy containing nickel, Barberite has corrosion-resisting properties in many instances superior to white nickel alloys and other high copper bronzes. The high tensile strength of Barberite is comparable with mild and medium carbon steels.

Barberite Standard Gate Valve—Screwed Bonnet—Screwed Ends

Barberite is not brittle. It is tough, elastic, dense. While silicon is one of the elements used, this alloy has no tendency to segregate, separate into pockets, or crystallize, and thus cause weak spots.

Successfully resisting sulphuric acid, Barberite also resists many other acids, bases, salts, and organic compounds—write to us for our folder which contains a complete list.

Barberite Standard Gate Valves are furnished in these sizes: Screwd bonnet, screwed ends, ¾″, 1″, 1½″. Bolted bonnet, screwed or flanged ends, 2″, 3″, 4″, 6″, 8″.

Barberite Standard Gate Valve—Bolted Bonnet—Screwed or Flanged Ends

We are prepared to make special Barberite castings from patterns furnished, or will make patterns to order.

THE BARBER ASPHALT COMPANY

Iroquois Department

New York PHILADELPHIA Chicago

Pittsburgh St. Louis Kansas City San Francisco

BARBERITE

PATENTS PENDING

Non-Corrosive Acid-Resisting

VALVES and SPECIAL CASTINGS

for Oil Refineries and General Chemical Purposes

A good distinction, Mr. Ralph!

H. W. Ralph, writing on "Accounting Methods for Refineries" in the National Petroleum News of September 19, says, "It will be found necessary for all organizations to distinguish in their expenditures for labor and for supplies and materials between operating and repairs."

This is a good distinction. Applied to valves, it places in the repairs column all replacements, new parts and the cost of repair labor.

This would demonstrate in black and white the benefits of standardizing on Jenkins Valves. With Jenkins installed throughout, the repairs account is bound to show lower figures and fewer entries.

Jenkins Valves give maximum rather than average service because they are built to give it. Metals, for example, are chosen with the utmost care, and subjected to thorough analyses by competent metallurgists before and after casting, in machining, assembly and test. Jenkins standards are scrupulously high through every stage of manufacture.

Jenkins Valves are obtainable through supply houses everywhere. If you so order, you can obtain oil tested gate valves and globe valves with discs for oil.

JENKINS BROS.
80 White Street.....New York, N. Y.
524 Atlantic Avenue.....Boston, Mass.
133 No. Seventh Street.....Philadelphia, Pa.
646 Washington Boulevard.....Chicago, Ill.
JENKINS BROS., Limited
Montreal, Canada London, England

Always marked with the "Diamond"
Jenkins Valves
SINCE 1864

WILDCAT OPERATIONS IN OKLAHOMA

(Continued from Page 47)

OKLAHOMA COUNTY

Slick & Bailey's No. 1 Koester, C SE NE Sec. 18-13-3w..Shut down 4,510 ft.
Cromwell & Franklin's No. 1 Thompson, SW cor. NE NE Sec. 15-12-2w.....Shut down 7,001 ft.
Cromwell & Franklin's No. 1 Gross, SW cor. NE SW Sec. 22-10-2w.....Dry and abandoned 4,702 ft.
Indian Terr. Ill. Oil Co.'s No. 1 fee, C SE SE Sec. 24-11-3w.....Drlg. 6,028 ft.

OKFUSKEE COUNTY

Moose & Daniels' No. 1 Stidham, SW cor. NW Sec. 4-11-10.....Shut down 622 ft.
Dixie Oil Co.'s No. 1 Drew, NE cor. SW Sec. 8-13-10....Drlg. 2,712 ft.

SEQUOYAH COUNTY

Cooper & Badger's No. 1 Young NW cor. NE NE Sec. 7-12-20.....Shut down 440 ft.
Hunt and others' No. 1 Unknown, SE cor. NW SW Sec. 12-12-23.....Shut down 635 ft.

PAWNEE COUNTY

Washoma Oil Co. and others' No. 1 Buffalo, SE cor. NE Sec. 33-22-5.....Cleaning out 3,194 ft.

POTTAWATOMIE COUNTY

Phillips-Atlantic's No. 1 Winrow, SW cor. NE NE Sec. 11-9-4.....Drlg. 1,625 ft.
Superior Oil Co.'s No. 1 Herminghausen, SW cor. NW
Roxana Pet. Corp.'s No. 1 Lowe, SW cor. NW NE Sec. 17-6-5.....Rigging up rotary.
NE Sec. 24-8-2.....Cleaning out 4,920 ft.
Pure Oil Co.'s No. 1 Lindley, SE cor. SW SE Sec. 18-8-5..Simpson sand 4,098-4,115 ft.; completed, pinched in.
T. B. Slick's No. 1 Sailor, SE cor. NW NW Sec. 12-8-3...Location.
Roxana Pet. Corp.'s No. 1 Deister, NW cor. SE NE Sec. 20-6-5.....Dry and abandoned 4,271 ft.
T. B. Slick and Roxana Pet. Corp.'s No. 1 Hurst, SE cor. NW NW Sec. 17-7-2.....Drlg. 5,240 ft.
Tomlinson et al's No. 1 Whisenhurst, NW cor. NE SE Sec. 35-7-5.....Drlg. 4,022 ft.
Phillips Petroleum Co.'s No. 1 Parman, SE cor. SW Sec. 15-8-4.....Drlg. 4,260 ft. corrected.
Champlin Refining Co.'s No. 1 Foster, SW cor. NE SW Sec. 14-7-5.....Drlg. 3,090 ft.

CADDO COUNTY

Magnolia Petroleum Co.'s No. 1 Shelby, SW cor. SW Sec. 28-10-12w.....Drlg. 4,472 ft.
J. V. Bailey's No. 1 Hubbard, C NE NW Sec. 1-10-6w..Shut down 150 ft.
W. J. Hartley's No. 1 Galbreath, SE cor. NW SE Sec. 29-5-12w.....Shut down 3,394 ft.
English Drilling Co.'s No. 2 Pruitt, CNL NW SE Sec. 22-6-10w.....Rigged up and shut down.
Red Bank Oil Co.'s No. 1 Shanklin, C NW Sec. 15-12-11w.Shut down for casing 4,520 ft.

OSAGE COUNTY

Amerada Pet. Co.'s No. 1, NE cor. SW, Sec. 25-26-6....Dry and abandoned 2,925 ft.
White Eagle Oil & Ref Co.'s No. 1, SE cor. NE Sec. 25-26-6.....Rig.

STEPHENS COUNTY

Wade-Martin & Smythe's No. 1 Vestal, NE cor. SE Sec. 20-2-5w.....Dry and abandoned 2,510 ft.
Stahl & Burris' No. 1 Jefferson, SE cor. NE NW Sec. 2-1-7w.....Drlg. 1,510 ft.

SEMINOLE COUNTY

Prairie Oil & Gas Co.'s No. 1 Davis, NE SE Sec. 21-10-7..Fishing 3,350 ft.
Superior & Fuhrman's No. 1 Fay, NW cor. SE SW Sec. 27-11-6.....Drlg. 4,560 ft.
Magnolia Pet. Co.'s No. 1 Germany, SE cor. NW Sec. 30-9-5.....Drlg. 4,045 ft.
Phillips Pet. Co.'s No. 1 Miller, NW cor. SW Sec. 34-11-7.....Drlg. 500 ft.
Burke-Greis Oil Co.'s No. 1 Cyrus, SE cor. NE NW Sec. 13-9-7.....Drlg. 2,260 ft.
Harris et al's No. 1 Stidham, SE cor. NW Sec. 30-9-8....Drlg. 3,660 ft.
T. B. Slick's No. 1 Wood, NE cor. NE SW Sec. 26-7-6....Cromwell sand 3,314-20 ft., flowing 1,000 bbls.
C. B. Shaffer's No. 1 Carolina, SE cor. SW NE Sec. 4-6-7..Drlg. 4,702 ft.
E. W. Whitney's No. 1 Harjo, NE cor. NW NE Sec. 25-7-6.....Plugged back 4,325 ft. and shut down.
Gypsy Oil Co.'s No. 1 Andrews, NE cor. SW NW Sec. 27-10-7.....Drlg. 2,250 ft.
Shaffer Oil & Ref. Co.'s No. 1 Catchochee, SW cor. SW NE Sec. 18-10-7.....Wilcox 4,705-10 ft. hole; hole full water; plugging back to Cromwell sand, and set 5-inch casing 3,730 ft.
Prairie Oil & Gas Co.'s No. 1 Rogers, SE cor. NE SE Sec. 14-10-6.....Dry and abandoned 4,729 ft.
T. W. Adkins' No. 1 Reed, NE cor. NW Sec. 2-8-8 .....Spudded.
T. B. Slick, Inc.'s No. 1 Tiger, NW cor. SW SE Sec. 13-8-5.....Drlg. 1,650 ft.
Magnolia Petroleum Co.'s No. 1 Sissy, SW cor. NE Sec. 33-8-7.....Drlg. 4,016 ft.
McCulloch Oil Co.'s No. 1 McGilbray, SW cor. SW NE Sec. 4-8-8.....Rigging up.
Empire Gas & Fuel Co.'s No. 1 Harjo, SW cor. NW SE Sec. 17-7-6.....Rigging tools 4,318 ft.
Marland Oil Co.'s No. 1 Strothers, NW cor. SE NE Sec. 5-10-7.....Rig.
Magnolia Pet. Co.'s No. 1 Carroll, SW cor. NW SE Sec. 1-7-5.....Location.

MAJOR COUNTY

Randau & Mooney's No. 1 Parker, SE cor. NE NW Sec. 4-23-16w.....Show of oil 1,235 ft.; shut down

WOODS COUNTY

E. K. Miller's No. 1 Copenhavers, NW cor. NW Sec. 18-24-13w.....Rig.

MURRAY COUNTY

Bison Oil Co.'s No. 1 Labor, NW cor. NW Sec. 17-1-2....Drlg. 1,410 ft.

DEWEY COUNTY

Huckaby & McCoy's No. 1 Perfect, NE cor. NE Sec. 9-18-15w.....Fishing 4,345 ft.
Don Sifers' No. 1 Jordan, SW cor. NW Sec. 16-16-17w....Spudded and shut down.

BECKHAM COUNTY

C. & H. Petroleum Co.'s No. 1 Barnes, SW cor. NW NE Sec. 32-9-22w.....Shut down 3,460 ft.
Martin et al's No. 1 Cluck, NW cor. SE, Sec. 1-8-25w....Spudded.
L. C. Hivicks' No. 1 Davis, C NW NE Sec. 4-11-26w....Drlg. 725 ft.
Producers Exploration Co.'s No. 1 Seidell, SE cor. SW SW Sec. 17-9-22w.....Drlg. 2,510 ft.
Carson et al's No. 1 Danby, SW cor. SE NE Sec. 20-8-22w.....Location.
Pferffel and others' No. 1-A Carter, NE cor. NE Sec. 35-9-22w.....Shut down 1,500 ft.
Day Oil Co.'s No. 1 Ault, NW cor. NW Sec. 33-8-21w....Spudded.

GRADY COUNTY

Remington and others' No. 1 Fryrear, SW SW NE Sec. 13-9-5w.....Shut down 720 ft.
Dave Malernee's No. 1 Hall, SE cor. NW SW Sec. 8-3-7w.Dry and abandoned 3,502 ft.
Commercial Development Co.'s No. 1 Chrisman, C NE NE Sec. 21-4-7w.....Dry and abandoned 3,360 ft.
J. V. Bailey's No. 1 Hubbard, C NE NW Sec. 1-10-6w....Spudded and shut down.
J. M. Henry and others' No. 1 Abraham, SE cor. NW Sec. 4-5-8w.....Rig.
Commerce Development Co.'s No. 1 Taylor, C NE NW Sec. 4-3-7w.....Testing sand 2,410-21 ft.
J. B. Nichols' No. 1 Brake, SE cor. NE SE Sec. 7-5-7w..Shut down 2,307 ft.

M'INTOSH COUNTY

Marlone Oil Co.'s No. 1 Sanders, NW cor. NE SW Sec. 10-9-18.....Shut down 2,387 ft., corrected.
Patterson et al's No. 1 Smith, SW cor. NW SE Sec. 32-9-16.....Shut down 5,451 ft.
Wolfe et al's No. 1 Unknown, NW cor. SE Sec. 15-12-18..Rig on ground.

CLEVELAND COUNTY

Daniels & LeWright's No. 1 Vandever, C SW Sec. 15-7-1w.....Shut down 3,130 ft.

KIOWA COUNTY

Blue Mountain Oil Co.'s No. 1 Jones, SE cor. NW NW Sec. 17-5-14w.....Shut down 530 ft.
Sloan-Russell's No. 1 Rushton, NE cor. SW SE Sec. 6-5-14w.....Spudded.
J. M. Burke's No. 1 Fox, SW cor. NW Sec. 4-6-16w.....Drlg. 799 ft.

"We Can Always Depend on Graver"

A WELL KNOWN marketer wrote to us commenting on the fact that his company had been using Graver tanks for twenty-five years.

His letter went on to state that the one big reason why Graver tanks were never questioned was that their experience had shown them that, *"We can always depend on Graver."* This is saying a whole lot.

One of the first principles laid down by the founder of Graver Corporation was that the customer must always be satisfied with his purchase. In other words, the tank must make good in every way—or Graver will.

Can you ask for a better guarantee?

GRAVER *Founded 1857* *Corporation*
EAST CHICAGO, INDIANA

NEW YORK Grand Cent. Term. | CHICAGO America Fore Bldg. | FORT WORTH Petroleum Bldg. | LOS ANGELES Pacific Nat'l Bank Bldg.

What Happens?

When Your Machinery Starts and Stops

Much of the wear and tear on machinery comes from starting and stopping. For then the fluid film of lubrication is broken, *and unless you are using the right lubricant,* friction takes a heavy toll.

As long as the fluid film is intact, the quality of the lubricant is not so important—but when the fluid film breaks, as it does every time you start and stop a machine—the quality of the lubricant supplied to the bearings is of prime importance, if friction is to be kept from doing serious damage.

After exhaustive tests, scientists in our laboratories developed Humble Oils, which retain the proper viscosity and hold their fluid film at the operating temperatures produced by high speeds. And, in addition, Humble Oils have that all-important quality—the ability to leave a semi-plastic, adsorbed, protective film on the surface of the metal, after the fluid film is broken. This quality in Humble Oils prevents excess abrasion during periods of partial lubrication, which is specially important with bearings, like those of line shafts, countershafts and machine tools, which are started and stopped frequently and are often subjected to peak loads.

Reg. U. S. HUMBLE OIL & REFINING CO. HUMBLE OILS HOUSTON, TEXAS *Pat. Off.*

There is a Humble Oil which is specially prepared to meet every bearing need in your plant, your trucks or your automobile.

Humble Oil & Refining Co.
HOUSTON, TEXAS

Producers - Pipe Lines - Refiners - Marketers

Johnson & McDowell's No. 1 Thompson, SW cor. NE Sec. 6-6-15w ..... Shut down 1,725 ft.
Dave Malernee's No. 1 Van Kirk, NW cor. NW Sec. 35-7-15w ..... Shut down 858 ft. in granite
A. C. Varner and others' No. 1 Bonham, CSL NW NW Sec. 5-6-18w ..... Shut down 1,127 ft.

CUSTER COUNTY

W. E. Witts' No. 1 Wellman, C SE Sec. 1-14-14w ..... Rig and tools.

PONTOTOC COUNTY

Moore & Curran's No. 1 Allen, SE cor. SW SW Sec. 23-5-5 ..... Shut down 1,460 ft.
C. J. Shervin and others' No. 1 Wright, NW NE NE Sec. 13-4-6 ..... Wilcox corrected 3,565-70 ft.; and abandoned.
Roxana Pet. Corp.'s No. 1 Folsom, NW cor. SW Sec. 20-4-4 ..... Drlg. 800 ft.
Boles and others' No. 1 Rayburn, SW SE Sec. 35-4-6 ..... Lost underreamer; abandoned 1,340 ft.
Texas Pacific Coal & Oil Co.'s No. 1 Stewart, C SW NE Sec. 11-5-8 ..... Preparing to test Wilcox 3,435
American Oil Refining Co.'s No. 1 Jones, NE cor. NE Sec. 18-5-5 ..... Drlg. 1,900 ft.
Douglas Oil Co.'s No. 1 Sutton, C NW NW Sec. 10-3-8 ..... Dry and abandoned 3,165 ft.

GARVIN COUNTY

R. F. Garland's No. 1 Strickland, SW NW SW Sec. 10-4-3 ..... Drlg. 3,256 ft.
Dixie Oil Co.'s No. 1 Perkins, SE NW Sec. 15-4-1 ..... Dry and abandoned 5,455 ft.

COMANCHE COUNTY

Jolly-Ogg Oil Co.'s No. 1 Neeley, SE NE Sec. 24-3-10w ..... Dry and abandoned 3,014 ft.
Green and others' No. 1 Wilson, C NE SW Sec. 14-1-12w ..... Drlg. 3,988 ft.
Wirt Franklin Pet. Co.'s No. 2 Holler, NW cor. NW Sec. 2-4-11w ..... Drlg. 1,270 ft.

COAL COUNTY

McGraw and others' No. 1 Patton, SW SE NE Sec. 35-1-8 ..... Wilcox 4,770-93 ft., dry, plugg back to show oil 1,790 ft.
Indian Territory Illuminating Oil Co.'s No. 1 Harris, SW cor. NW Sec. 10-1-11 ..... Drlg. 4,660 ft.
Robert Galbreath and others' No. 1 Jones, SW cor. SE Sec. 24-1-9 ..... Shut down 1,595 ft.

PITTSBURG COUNTY

McAylor et al's No. 1 Reed, NW cor. SW NW Sec. 7-6-14 ..... Drlg. 885 ft.

JACKSON COUNTY

Altus Oil Co.'s No. 1 Northington, NE cor. NE Sec. 4-1-20w ..... Shut down 735 ft.

SOUTHERN OKLAHOMA

BRYAN COUNTY

Green Oil & Ref. Co.'s No. 1 Kemp, SE cor. NW NW Sec. 28-8s-9 ..... Abandoned 600 ft.
Alexander & Oppenheimer's No. 1 Hampton, SE cor. NE Sec. 26-7s-11 ..... Shut down 1,425 ft.

MURRAY COUNTY

Gilcrease Oil Co. and Mohawk Drilling Co.'s No. 1 Wolfe, SE cor. NE Sec. 20-1-2 ..... Dry and abandoned 1,984 ft.
Alter and others' No. 1 Johnson, SW cor. NW Sec. 14-4-7. Spudded and shut down.

COTTON COUNTY

Cuyler & Pyson's No. 1 Thomas, SE cor. SE SW, Sec. 16-4-12w ..... Drlg. 1,630 ft.
G. E. Crane et al's No. 1 Montgomery, C NW NE Sec. 33-2s-9w ..... Shut down 3,510 ft.

JEFFERSON COUNTY

M. Mitchim's No. 1 Newcomb, SW cor. SE SE, Sec. 8-5-4w ..... Dry and abandoned 2,534 ft.
Fritz et al's No. 1 Barrett, C SE SE Sec. 5-6S-7w ..... Drlg. 1,736 ft.
Amerada Petroleum Co.'s No. 1 Emerson, NW cor. SE SW Sec. 28-5s-8w ..... Shut down 4,516 ft.

CHOCTAW COUNTY

Hugo Gray's No. 1 Smith, SE cor. SW NW Sec. 27-6s-16 .. Dry and abandoned 1,540 ft.
Choctaw Petroleum Co.'s No. 1 Wilson, SW cor. SW Sec. 15-6-19 ..... Shut down 1,346 ft.

TILLMAN COUNTY

Bray and others' No. 1 Barker, NE cor. SW NW Sec. 9-1-15w ..... Dry and abandoned 630 ft.
A. J. Bundy's No. 1 Hayster, NE cor. SW SE Sec. 23-2-17w ..... Location.
Dixie Oil Co.'s No. 1 McKinney, NE cor. NE Sec. 29-3s-18w ..... Corrected; drlg. 1,845 ft.
A. N. Pearson's No. 1 Mounts, SW cor. SW Sec. 3-5s-15w. Shut down 1,641 ft.
Stanley & McGregor's No. 1 Mock, NW cor. NW SW Sec. 33-1-20w ..... Shut down 2,485 ft.
Landfair and others' No. 1 Smith, SE SW SE Sec. 6-2s-16w ..... Shut down 2,500 ft.

STEPHENS COUNTY

Clark & Cowden's No. 1 Watkins, SE cor. NE SW Sec. 22-2-7w ..... Dry and abandoned 2,500 ft.

JOHNSTON COUNTY

Wapanucka Oil Co.'s No. 1 Banks, Sec. 28-2s-9 ..... Shut down 1,530 ft.
Bush Creek Oil Co.'s No. 1 Kirby, SE cor. NE NW Sec. 9-4-7 ..... Shut down for casing 405 ft
Smith & Kinsley's No. 1 Lane, SE cor. NW Sec. 29-1-7... Drlg. 1,080 ft.
Wirt Franklin Pet. Co.'s No. 1 Wilkes, SW cor. SE Sec. 18-4-4 ..... Dry and abandoned 4,505 ft.
Wirt Franklin Pet. Co.'s No. 1 Foster, CNL NW SW Sec. 16-4-4 ..... Dry and abandoned 1,375 ft.
Yale Oil Syndicate's No. 1 Craige, C NW NE Sec. 36-9s-9e ..... Location.
Sullivan et al's No. 1 Wines, NW NE NW Sec. 11-7s-5e... Drlg. 300 ft.
E. J. Stump et al's No. 1 McGinnis, SW Sec. 26-3s-8w... Rig.
McCraw et al's No. 1 Trust, SW Sec. 12-1s-8e ..... Rig.

KANSAS WILDCATS

(Continued from Page 48)

Phillips Pet. Co.'s No. 1 Brull, C NW Sec. 34-14-17w .... Spudded.
Moncrief et al's No. 1 Johnson, SW cor. NE Sec. 9-13-19w ..... Rig.
John Brown's No. 1 Gestner, SE cor. SW NE Sec. 13-13-18w ..... Spudded and shut down.
Empire Oil & Ref. Co.'s No. 1 Wann, NE cor. NE Sec. 31-12-19w ..... Drlg. 2,315 ft.
Mid-West Exploration Co.'s No. 36 Furthmer, SE cor. SE Sec. 25-12-16w ..... Spudded.
Phillips Pet. Co.'s No. 1 Shultz, C NE Sec. 5-12-17w ..... Drlg. 3,285 ft.
Mid-West Exp. Co.'s No. 1 Austin, NE cor. NE Sec. 36-12-16w ..... Casing trouble 3,060 ft.
Marland Oil Co.'s No. 1 Vine, SW cor. SW SE Sec. 27-11-19w ..... Drlg. 1,275 ft.
Stearns & Streeter's No. 1 Plummer, NW cor. SE Sec. 2-11-17w ..... Oswalt lime 3,034-39; 60 bbls. oi
T. B. Slick, Inc.'s No. 1 Craig, C NW NE Sec. 8-11-16w... Drlg. 2,800 ft.

EDWARDS COUNTY

Amerada & Wilcox' No. 1 Teansil, C NW SW Sec. 32-25-19w ..... Drlg. 3,315 ft.

GEARY COUNTY

Pioneer Oil Co.'s No. 1 Chase, SE cor. SE Sec. 10-12-7.... Drlg. 3,440 ft.
Wright et al's No. 1 Younker, NW cor. NE Sec. 17-11-5... Drlg. 1,074 ft.

GRAHAM COUNTY

Gulf Coast Oil Co.'s No. 1 Johnson, C S half Sec. 27-8-25w ..... Drlg. 1,620 ft.

GREENWOOD COUNTY

Bisagno et al's No. 1 Gilroy, NW cor. SW SW Sec. 8-25-13 ..... Dry and abandoned 1,642 ft.
P. H. Ballew's No. 1 Bright, NE cor. SW Sec. 22-27-12... Shut down 1,210 ft.
Ladow Gas Co.'s No. 1 Lawrence, SE cor. SW SE Sec. 4-27-13 ..... Dry and abandoned 1,630 ft.
Ward McGinnis' No. 1 Robbins, NE cor. NW Sec. 16-24-9.. Show of oil 2,116 ft.
Hanley et al's No. 1 Peterson, NW cor. NE SE Sec. 4-26-13 ..... 1,000,000 ft. gas, 1,528-31 ft.; c pleted.

HARPER COUNTY

Amerada Pet. Corp.'s No. 1 Mendiville, C E SE Sec. 24-34-6w ..... Fighting cave 5,360 ft.

HARVEY COUNTY

R. S. Austin's No. 1 Nieman, SW cor. SW Sec. 21-24-2.... Drlg. 2,240 ft.

JEFFERSON COUNTY

Wichita Oil Co.'s No. 1 Simpson, NW cor. SW SW Sec. 19-10-17 ..... Rigged up and shut down.

JACKSON COUNTY

Garvin & Morton's No. 1 Lutes, SW cor. NW NW Sec. 27-7-15 ..... Shut down 940 ft.

LYON COUNTY

T. K. Simmon's No. 1 Milner, SE cor. NW Sec. 35-21-11.. Drlg. 1,640 ft.

MARSHALL COUNTY

Irwin et al's No. 1 Cooper, NE cor. NW Sec. 10-3-7 ..... Drlg. 620 ft.

MARION COUNTY

Prairie O. & G. Co.'s No. 1 Theis, NW cor. NW Sec. 15-19-4 ..... Dry and abandoned 2,715 ft.
Empire Oil & Ref. Co.'s No. 1 Burhart, SE cor. NE NE Sec. 11-20-3 ..... Spudded.
J. E. Hauna's No. 1 Pankratz, NE cor. NE SW Sec. 13-20-3 ..... Rig.
Empire Oil & Ref. Co.'s No. 1 Jenson, SE cor. NW Sec. 26-22-5 ..... Rig.
Courtney B. Davis' No. 1 Rampel, SE cor. NE SE Sec. 7-19-3 ..... Chat 2,424-52 ft.; spray oil and 8,000,000 ft. gas.
A. E. Meyers, No. 1 Papp, SW cor. SW NE Sec. 10-18-2.. Rig.
Raymond Gear's No. 1 Larson, NW cor. SW NW Sec. 18-21-4 ..... Shut down 2,330 ft., corrected.
Empire Oil & Ref. Co.'s No. 1 Siebert, SW cor. SE Sec. 28-20-2 ..... Sand 2,425-27 ft., 1,500,000 ft gas, shut in.

MEADE COUNTY

Blackwell O. & G. Co.'s No. 1 Beyer, SE cor. NW SE Sec. 9-33-28w ..... 500,000 ft. gas and 2 bailers water total depth 4,356 ft.

MITCHELL COUNTY

Ben Gurley et al's No. 1 Crombil, C NE NE Sec. 32-9-7w ..... Drlg. 3,550 ft.

MORRIS COUNTY

Hugh Faulder's No. 1 Wendt, SW cor. SE SE Sec. 18-15-5 ..... Spudded.
Loomis & Anderson's No. 1 Young, NW cor. SE, Sec. 14-17-7 ..... Drlg. 1,730 ft.
Skelton et al's No. 1 Iles, NW cor. NW Sec. 25-16-5..... Rig.
General Utilities Co.'s No. 1 Sanford, NE cor. NE Sec. 15-16-7 ..... Drlg. 1,425 ft.
O'Day et al's No. 1 Scott, NE cor. SW Sec. 6-16-6 ..... Rig.

McPHERSON COUNTY

Galt-Brown's No. 1 Blaine, C NE Sec. 18-17-1w ..... Drlg. 3,362 ft.
John Heron's No. 1 Vosshell, NE cor. NE Sec. 9-21-3w... Shut down 500 ft.
Lariaux et al's No. 1 Martinson, NE cor. Sec. 9-19-3w... Rig.
McPherson Gas Co.'s No. 1 Stein, SW cor. NE SW Sec. 17-18-1w ..... Drlg. 1,529 ft.
McPherson Gas Co.'s No. 1 Gustafson, C NE Sec. 9-17-2w ..... Drlg. 2,300 ft.
W. C. Newman's No. 1 Diepenbrock, NW cor. NE Sec. 2-17-1w ..... Drlg. 2,815 ft.
Vickers Pet. Co.'s No. 1 Wedel, C SW Sec. 12-20-2w..... Rig.

OSAGE COUNTY

York State Oil Co.'s No. 1 Smith, SE cor. SW NW Sec. 18-18-15 ..... Drlg. 1,020 ft.

OSBORNE COUNTY

T. C. Johnston's No. 1 Cooley, C NW NE Sec. 15-8-15w... Drlg. 2,912 ft.
L. D. Jarvis' No. 1 Jellison, SE cor. SE Sec. 13-10-15w... Spudded and shut down.

OTTAWA COUNTY

Anderson et al's No. 1 Bank, NE cor. NW Sec. 28-10-2w.. Shut down 2,450 ft.

PAWNEE COUNTY

F. C. Troupe's No. 1 Lovett, CEL NE NE Sec. 31-21-16w. Shut down 1,560 ft.

PHILLIPS COUNTY

Watsonian Oil Co.'s No. 1 Marklein, NE cor. SW Sec. 21-3-19w ..... Drlg. 1,912 ft.

RENO COUNTY

Empire and Marland's No. 1 Williams, SE cor. NE Sec. 5-26-4w ..... Dry and abandoned 4,144 ft.

RICE COUNTY

Allison & Fitzwilliams' No. 1 Poland, NE cor. SW NE Sec. 36-19-8w ..... Cellar.

ROOKS COUNTY

Phillips Pet. Co.'s No. 1 Overholtzer, C SE Sec. 30-9-16w.. Drlg. 3,120 ft.
Empire G. & F. Co.'s No. 1 Woodrill, NE cor. SE NW Sec. 15-8-18w ..... Drlg. 3,116 ft.
Krueger et al's No. 1 Poore, NE cor. NE Sec. 14-8-16w... Drlg. 1,911 ft.
Burford & Brimm's No. 1 Toxa, NE cor. SW SE Sec. 22-19-17w ..... Spudded and shut down.
Krueger et al's No. 1 Poore, NE cor. NE Sec. 14-8-16w.. Drlg. 2,730 ft.
Skelly & Mid-West's No. 1 Jones, SW cor. NE NW Sec. 28-7-16w ..... Shut down 3,485 ft.

RUSH COUNTY

Danciger Valerius & Chenney's No. 1 Schuerman, NW cor. SE NW Sec. 27-17-17w ..... Drlg. 3,486 ft.
Sinclair Oil & Gas Co.'s No. 1 Berching, NW cor. NE NW Sec. 9-16-16w ..... Drlg. 1,180 ft.

RUSSELL COUNTY

Douglas Oil Co.'s No. 1 Stoppel, SE cor. SW NE Sec. 25-14-11w ..... Dry and abandoned 3,505 ft.
Gypsy Oil Co.'s No. 1 Cook, C NE SE Sec. 10-13-15w .... Dry and abandoned 3,448 ft.
Stearns & Streeter's No. 1 Haise, NE cor. SE SE Sec. 36-12-15w ..... Shut down top Oswalt lime 2,974 ft.
Joe Liggett's No. 1 Maier, SE cor. NE SE Sec. 8-11-15w.. Top Oswalt 3,016 ft.; drilling at 3,120 ft.

SALINE COUNTY

M. Esty et al's No. 1 Peterson, C NE Sec. 6-16-5w..... Spudded and shut down.
Boyle et al's No. 1 Miller, SW cor. SE Sec. 21-16-1w..... Drlg. 1,485 ft.
Nathan Jones et al's No. 1 Robertson, NW cor. SW Sec. 27-14-2w ..... Shut down 1,500 ft.

SEDGWICK COUNTY

Bu-Vi-Bar Pet. Co.'s No. 1 Wright, SE NE SE Sec. 12-26-1w ..... Sand 3,367-68 ft., flowing 1,700 bbls. daily.
Bu-Vi-Bar et al's No. 1 Roberts, SE cor. SW Sec. 1-26-2w ..... Rig.
Lewis et al's No. 1 Taylor, NW cor. NE Sec. 23-27-2 .... Rig.
J. H. Tatlock et al's No. 1 Goeldnea NW cor. NE Sec. 6-29-2e ..... Drlg. 1,150 ft.
La Robb Oil Co.'s No. 1 Davis, SE cor. SE Sec. 36-25-1w.. Drlg. 600 ft.
Maglason et al's No. 1 Buckles, NW cor. SE Sec. 3-28-1w.. Shut down 250 ft.
Barnsdall Oil Co.'s No. 1 Faber, SW cor. NW Sec. 6-27-1w ..... Drlg. 1,245 ft.
Bu-Vi-Bar Pet. Co.'s No. 1 Steel, SE cor. SE Sec. 1-26-2w. Spudded.
Connell & Slick's No. 1 Cross, NE cor. NE Sec. 27-25-1w.. Rig.
Allison & Fitzwilliams' No. 1 Doane, NE cor. NW NE Sec. 24-26-1w ..... Cleaning out 3,031 ft.
VanZant & Mason's No. 1 Fox, C NW SW Sec. 19-25-1w.. Drlg. 585 ft.
Barnsdall Oil Co.'s No. 1 Samuels, NE cor. NW Sec. 24-25-1 ..... Drlg. 1,100 ft.
Marland Prod. Co.'s No. 1 Goodrich, SW cor. NE SW Sec. 16-25-1 ..... Rig.

SEWARD COUNTY

W. Sidwell et al's No. 1 Kelly, SW cor. NE Sec. 16-34-33w ..... Shut down 1,213 ft.
McKanna et al's No. 1 Haun, SE cor. NE Sec. 10-33-33w.. Drlg. 1,035 ft.
T. B. Slick's No. 1 Pyle, NE cor. NE Sec. 14-33-33w..... Shut down 5,005 ft.

SHERMAN COUNTY

A. L. Henson et al's No. 1 Murry, NE cor. SE NW Sec. 27-7-40w ..... Shut down 3,035 ft.

STEVENS COUNTY

Trees Oil Co.'s No. 1 Thompson C NE SW Sec. 3-35-38w.. Casing trouble 600 ft.

SUMNER COUNTY

McCulloch Oil Co.'s No. 1 Teettle, SW cor. NE Sec. 29-34-1w ..... Drlg. 2,400 ft.
Gypsy Oil Co.'s No. 1 Williams, NW SE SW Sec. 16-35-3w ..... Drlg. 3,580 ft.
Helmerich & Paynes' No. 1 Warlick, SE cor. NE Sec. 8-34-2 ..... Drlg. 2,380 ft.
Otstot et al's No. 1 Barlow, SE cor. SE Sec. 22-33-3w... Wilcox 4,479-4,482 ft., show oil and gas.
George Dickey's No. 1 Knox, SW cor. NE Sec. 3-35-1w... Underreaming 3,550 ft.
Otstot et al's No. 1 Volker, NW cor. NE Sec. 9-35-1..... Rig.
Davidson and others' No. 1 Strickland, SW cor. SE Sec. 12-35-1w ..... Rig.
Sam Jarvis' No. 1 Warnecke, SE cor. SW Sec. 4-34-3w... Drlg. 4,575 ft.

TREGO COUNTY

Central Commercial Oil Co.'s No. 1 Ellis, NE cor. SW NE Sec. 20-13-21w ..... Drlg. 2,125 ft.

WASHINGTON COUNTY

McCool & Vincent's No. 1 Linn, NW cor. NE Sec. 27-4-3.. Rig.

EDWARD VALVES

"forged steel" for refinery use!

Refinery operations demand valves that will render a most dependable service—that require very little supervision—that will stand up under severe usage and destructive chemical reaction.

Most important is their *full area* and *easy flow.* This is accomplished by the "Y" type construction as shown in the No. 628—one of the popular refinery types.

Edward pioneered the "forged steel" valve—they are today the largest producer—with more types and improved designs—of wider service range.

The necessity for "forged steel" valves is becoming more pronounced as modern refinery processes are demanding higher pressure. This however, is not their only advantage—*Edward "forged steel" valves are outstanding in their greater strength, low maintenance and unusually long service ability.*

And—Don't forget Edward "forged steel" valves are so low in price that you can standardize on them—*you can use them everywhere and save money.*

THE EDWARD VALVE & MANUFACTURING CO.
East Chicago, Indiana

Stocked by

Chapman Valve Manufacturing Co.,
115 W. First St., Tulsa

:-:

Maintenance Engineering Corp.,
1400 Conti St., Houston

Complete line to 1,350 Lbs. W. S. P. Std.

The new Edward Catalog No. 9 illustrates and describes in detail the complete line of forged steel Globe and Angle Stop Valves and Check Valves in both screwed and flanged ends for all service ranges.

They are fully "standardized" throughout making all valves interchangeable in the same style and size thus reducing maintenance and stock parts. It will pay to buy Edward forged steel valves.

No. 628—"Forged Steel," flanged bonnet, screwed ends, O. S. & Y., swivel plug seat and disc, 500 Lb. W. S. P. Seat, disc and stem of EValloy (stainless steel) which has great strength, hardness and resistance to corrosion.

The LORRAINE

TYPE "M" SEPARATOR

The LORRAINE
Type "M"
Separator.

Automatic
Fool-Proof
Economical
Minimum
Maintenance
Negligible
Depreciation

Noted for consistent and uninterrupted service • • •

Operators who previously have used other types are the most enthusiastic boosters for Lorraine Separators. For in every competitive test, average Lorraine performance greatly exceeds the best records of any other separator built.

For consistent, dependable performance under all conditions of service, always insist upon Lorraine Automatic Gas and Oil Separators.

THE LORRAINE CORP.

Manufacturers and Distributors

OIL WELL SPECIALTIES
115th and Alameda Streets
Los Angeles, Calif.

Oklahoma Branch:
The Lorraine Corporation,
Percy D. Hammer, Agent,
412 West First Street,
Tulsa, Okla.

Northern Branch:
J. W. Monaghan,
P & R Building,
Casper, Wyoming.

Line Pipe Ordered By Roxana Corp. for Line From M'Camey

PITTSBURGH, Pa., Nov. 5.—Details are not complete as to the distribution of the line pipe orders placed by the Roxana Petroleum Corp., for an oil line to run from McCamey to Houston, Tex. The main line involves about 450 miles of 10-inch, about 45,000 tons. It is known that large blocks were taken by the National Tube Co. and the Youngstown Sheet & Tube Co., but it is understood that the Wheeling Steel Corp. secured a tonnage, and there is even a rumor that some of the pipe, for laying near the seaboard, is to come from England.

Report has it that the Southern Natural Gas Co. has inquired for prices on about 25,000 tons of line pipe, 4-inch to 24-inch, but nothing definite is known. Generally speaking, not much is expected for some time by way of line pipe for natural gas as this would be out of season since the gas would not be available for consumption this winter.

Pipe and tube mills are still making heavy deliveries on old orders for line pipe, some of which are likely to last to the end of the year. The seamless tube mills seem to be better provided with line pipe business, relative to their capacity, than the welded pipe mills.

Buying of casing and other well material proceeds at approximately the same rate as formerly, rather a low rate compared with demand in 1926, but a pretty fair rate. Pipe mills do not expect much if any decrease for the winter.

Buying of standard or merchant pipe continues to wane, in keeping with the season, and is now distinctly lighter than the average of the past six months, but there is quite a fair movement at that.

Pipe mill operations have experienced little if any diminution, and may still be estimated at about 70 per cent, while seamless tube mills continue to run nearly full.

Steel ingot production in October averaged nearly if not quite a 90 per cent rate, against 88 per cent in September, 76 per cent in June, the low month of the year, and 91 per cent in April, the high month. There was a trifling decrease in mill operations during the month. Some further and seasonal decrease is expected to the end of the year, but by no means a large decrease.

With such heavy buying and specifying in September in bars, shapes, plates, sheets and strips it was expected that October would witness a decidedly marked lull. There was a decrease, but hardly as much as expected. In bars and sheets mills were behind and in deliveries they have caught up only a fraction of the amount. Buyers desiring early shipment frequently have to shop around. The condition in these two lines is exceptional, for with ingot production at 90 per cent and a general total of steel finishing capacity 20 per cent or more in excess of the steel producing capacity, the average operation of all the finishing departments is well under 90 per cent. The sheet industry is running substantially full as are most of the merchant bar mills.

Finished steel prices are firm all along the line, and naturally enough when demand is running exceptionally heavy for the time of year. In bars and shapes the general market is 1.90 to 2.00 cents, Pittsburgh. Carloads generally go at 1.95 cents, but when the specification is unattractive or the buyer wants particularly early delivery 2.00 cents is generally obtained. Good sized lots would go at 1.90 cents, which is approximately the average contract price for the quarter. No regular advance will be attempted for the first quarter of the new year, but the sheet mills fully intend to advance prices and some may make announcements to that effect within the next fortnight.

Steel company earnings reports show quite a moderate increase in earnings in third quarter over second quarter, while there was quite a large increase from first quarter to second. Tonnage being approximately the same in the three quarters, prices realized were the principal factor.

GRATEFUL LULING GIVES PARK LEASES TO DAVIS

LULING, Tex., Nov. 3.—The city of Luling has completed oil and gas leases on both the Luling colored park and the Davis Park on the San Marcos River to the United North and South Development Co., the leases being given complimentary to Edgar B. Davis, president of the company. Mr. Davis, when he sold his original oil field here to the Magnolia Petroleum Co. for $12,000,000, presented both these parks to the city of Luling, erecting expensive club houses on both of them.

The city has now a chance to reciprocate, as both of the parks are directly in the line of play and the leases could have been sold at a price running into thousands of dollars each had they been placed on the market. All of the park trustees joined the city officials in giving the leases, the gift being unanimous. The North and South bought from the city a lease on the tourist park just north of the Baptist Church, paying $1,500 for the tract of a city square, or a little over two acres. At the same price per acre the leases on the two other parks would have been worth at least $70,000.

GEOLOGISTS OF STATE TO MEET AT NORMAN

Papers and talks on shooting wells, refining and the geology of Oklahoma will make up the program to be presented at the University of Oklahoma November 9-10 when geologists and petroleum engineers from all over the State will meet with university faculty members and Dr. Charles N. Gould, director of the Oklahome geological survey.

The morning of the first day will be devoted principally to discussion of production and refinery methods. Prof. H. C. George, director of the school of petroleum engineering, will preside at this session.

Friday afternoon the discussion of state geology will be led by Dr. V. E. Monnett, director of the school of geology.

Saturday morning will be given over to a general summarizing of the papers and talks delivered at the previous meetings. Doctor Gould will preside.

FRANCHISES FOR MEXICAN OIL

MEXICO CITY, Mexico, Nov. 2. (By Trens Agency).—A study is now being made by the legal section and by the Petroleum Bureau of the Department of Industry, Commerce and Labor to determine what franchises shall be granted to encourage drilling in new ground or further proving of known pools.

The purpose of the law will be to induce individuals and companies to enter the new zones without endangering the federal reserves but to determine whether petroleum is to be found there. A decision is expected within two weeks so that advantage can be taken of it by the end of the rainy season.

NEW WEST TEXAS MAP

FORT WORTH, Tex., Nov. 3.—Logan Map Co., Fort Worth, Tex., has completed a combination map of Fisher and Jones Counties. It embraces the west half of Fisher County and the east half of Jones County, showing the fee and lease ownership and production and drilling development.

FORM OIL CORPORATION

W. R. and W. E. Ramsey, of Oklahoma City, have incorporated a $5,000,000 company, to be known as the Ramsey Petroleum Corp. W. R. Ramsey is president; W. E. Ramsey, vice president; R. M. Franks, vice president and head of the land department; W. L. Miller, vice president and chief geologist; F. L. Billups, secretary-treasurer.

LOUISIANA-ARKANSAS

(Continued from Page 51)

gas at 2,180 feet and is arranging to go deeper. Stovall Drilling Co.'s No. 1 Lieber, Section 4-18-4, is drilling at 2,110 feet. United Oil & Gas Products Co.'s No. 1 Stevens, Section 26-20-4, is shut down at 100 feet.

Union Parish—Moody & Seagraves cemented 12½-inch casing at 157 feet on No. 1 Dawkins, Section 17-20-4.

Red River Parish

Bull Bayou—Odell & Lawton have made location for No. 4 Richardson, 2,340 feet west and 2,700 feet south NE cor. SE Section 24 in Section 25-13-11.

Richland Parish

Magnolia Petroleum Co. set 257 feet of 15½-inch surface pipe on No. 1 McCoy, Section 29-16-6. Ouachita Natural Gas Co.'s No. 2 Perdue, Section 6-15-6 is shut down at 605 feet while the rig is being used in drilling a relief well to kill a crater.

Webster Parish

Cotton Valley—Magnolia Petroleum Co. is bailing No. 5 Cox, Section 15-21-10, to test at 4,690 feet, total depth 4,800 feet and set 15½-inch casing at 41 feet on No. 1 McCook & Hibbler, Section 22-21-10. Ohio Oil Co. is drilling lime at 2,810 feet on No. 42 Bodcaw, Section 27-21-10. Palmer Corp.'s No. 2 Tillman, Section 28-21-10, set 12-inch surface string at 435 feet. Superior Oil Co.'s No. 1 McCook & Hibbler, Section 21-21-10, is in lime at 3,875 feet.

Sarepta and Shongaloo—Virgil Helm has rig up to drill No. 1 Maxwell in Section 7-22-9. Jones and others' No. 1 Elkins, Section 33-23-9 is shut down for orders after testing 1,000,000 feet of gas at 2,690 feet. Magnolia Petroleum Co.'s No. 1 Bond, Section 5-22-9, set 308 feet of 15½-inch surface pipe and is drilling at 747 feet; No. 1 Oakes-Roseberry, Section 29-23-9 tested salt water with a show of oil and gas at 2,777 feet and No. 1 Scroggins, Section 1-22-11 is a derrick. Northwest Louisiana Gas Co.'s No. 8 Pine Woods, Section 34-23-11 is drilling at 3,156 feet.

ARKANSAS

Nevada County

Humble Oil & Refining Co. cemented 6-inch at 1,107 feet on No. C-5 Groves, Section 1-14-21 and has rig up for No. 2 Hain in the same section.

Ouachita County

Smackover—Crosbie and others' No. 1 Primm, Section 23-15-16, ecemented 6-inch casing at 2,006 feet.

Union County

Champagnolle—H. L. Hunt's No. 3 Gregory, Section 10-17-14, is drilling at 2,570 feet. E. M. Jones tested dry at 3,000 feet on No. 1 Sample, Section 7-17-13, and is coring. Lion Oil Refining Co.'s No. 4 Union Sawmill, Section 7-17-13, is drilling at 2,550 feet. Magna Production Co.'s No. 1 El Dorado Realty Co. in Section 7-17-13, set 10-inch at 50 feet and is drilling at 950 feet. Magnolia Petroleum Co. is drilling No. 2 Dumas, Section 11-17-14, at 3,015 feet and has derrick up for No. 2 Gregory 330 feet south and west NE cor. NW SE Section 15-17-14. Marine Oil Co.'s No. 3 Sample, Section 7-17-13, is drilling at 2,785 feet. C. E. Murdock set 10-inch surface casing on No. 2 Union Sawmill, Section 6-17-13, at 192 feet. Ohio Oil Co.'s No. 4 Crain, Section 1-17-14, is temporarily abandoned after salt water test with a show of oil at 3,174 feet; No. 9 Crain in the same section, is drilling at 2,790 feet; No. 1 Frazier, Section 6-17-13 has rig up and No. 2 Nash, Account 1, is drilling at 2,320 feet. No. 1 Nash, Account 2, in the same section is drilling at 1,122 feet with 10-inch cemented at 180 feet; No. 3 Nash, Account 2, has rig up. No. 1 Ward, Section 14-17-14, tested salt water at 2,812-20 feet and is drilling at 2,845 feet. J. W. Olvey's No. 1 Sample, Section 7-17-13, is drilling at 2,980 feet.

EAST TEXAS

Panola County

Beckman & Freeman's No. 4 Burns, in the Alex Birdsong Survey tested salt water at 1,051 feet and is shut down for orders. Magnolia Petroleum Co.'s No. 2 Lula Fletcher in the B. C. Jordan Survey tested 500,000 feet of gas at 1,014 pounds rock pressure and is drilling lime at 2,465 feet; No. 2 Steele in the same survey is in hard lime at 3,187 feet. Natural Gas Products Co.'s No. 2 Moore in the B. C. Jordan Survey is drilling at 2,000 feet. The Texas Company's No. A-6 Adams in the B. C. Jordan Survey is drilling 6-inch plug at 978 feet. D. Thomason's No. 11 Crenshaw, staged a blow-out of about 30,000,000 feet of gas from 2,460 feet and is running wild.

Harrison County

McRitchie and others' No. 1 Baldwin in the E. M. Fuller Survey is drilling at 2,050 feet.

CANADIAN FIELDS

(Continued from Page 56)

Most of the Turner Valley wells have got slight oil showings around this depth, and one well, the Alberta Petroleum Consolidated, now Okalta's No. 2, got a fair commercial production for some years. The oil in the grit beds is different from the ordinary Turner Valley light crudes, being a comparatively heavy product, 32 to 33 gravity.

Royalite's No. 14, LSD 4, Section 7-20-2w5, is at 3,239 feet and drilling 19 feet in the deep lime. This test some weeks ago got the top of the lime at a new high point, 3,220 feet, with a heavy burst of gas, and extra precautions were taken in cementing casing before drilling into the lime.

Royalite Oil Co.'s No. 12, LSD 3, Section 13-20-3w4, is drilling in the upper Dakota at 2,695 feet; Royalite's No. 13, LSD 6, same section, drilling in the lower Dakota at 4,039 feet; Royalite's No. 16, LSD 2, Section 12-20-3w5, at 3,425 feet and reaming at 2,410 feet; Royalite's No. 17, LSD 13, Section 6-20-2w5, standing cemented at 3,460 feet; Royalite's No. 18, LSD 15, Section 12-20-3w5, drilling in the lower Dakota at 2,696 feet; Royalite's No. 20, drilling at 885 feet; Royalite's No. 22, Section 13-20-3w5, at 2,127 feet and lowering casing to the top of the McDougall-Segur sand at 2,125 feet. Foothills Oil & Gas Co.'s No. 2, LSD 8, Section 1-20-3w5, is drilling at 3,178 feet after lowering 10-inch casing to 3,132 feet; Home Oil Co.'s No. 1, LSD 10, Section 20-19-2w5, is at 5,108 feet and cleaned out cavings, and has lowered 6¼-inch casing to 5,084 feet; Home's No. 3, LSD 14, same section, is down 3,720 feet with casing lowered to 3,679 feet. Northwest Associated's No. 1, LSD 6, same section, is at 200 feet and drilling out cement.

Resumes After Year

New Valley Oil Co., LSD 4, Section 6-21-2w5, has resumed drilling at 2,080 feet, after a shutdown of more than a year. This test is on an outlying structure, north and east of the main Turner Valley fold, being separated from the main field by a low range of hills. It is 2½ miles northeast of Foothills Oil & Gas Co.'s No. 1, which recently got wet gas production in the deep lime in the north end of the field, and about 3 miles east and slightly south of Freehold Oil Co.'s No. 1, which is the most northerly test in the Valley. New Valley's No. 1 is now drilling at 2,090 feet. Freehold Oil Co.'s No. 1, SW Section 3-21-3w5, is drilling at 2,085 feet, after some trouble with caving. Stockmen Oils' No. 2, LSD 7, Section 27-20-3w5, is drilling at 2,970 feet. Model Oils, LSD 8, Section 22-20-3w5, is at 2,550 feet and setting 12½-inch casing.

Mayland Oil Co., LSD 10, Section 17-19-2w5, is drilling in the lower Kootenay at 3,530 feet, with 10-inch casing down to 3,505 feet. East Crest Oil Co., LSD 5-6, Section 16-19-2w5, has resumed drilling after setting 12½-inch casing at 2,670 feet. Advance Oil Co.'s No. 5, LSD 16, Section 19-19-2w5, is drilling at 2,630 feet with small shows of gas and oil.

British Dominion Oil Development Corp.'s No. 2, LSD 6, Section 12-20-3w5, is drilling at 1,970 feet with 12½-inch casing to 1,950 feet. Regent Oil Co., LSD 16, Section 1-20-3w5, has resumed drilling after running 8¼-inch casing to the bottom at 3,325 feet. United Oils' No. 2, LSD 2, Section 24-20-3w5, is drilling at 4,315 feet.

An important new test is being started in the Jumping Pound district west of Calgary, where Imperial Oil, Ltd., is working on derrick for its Bow River No. 2. Imperial's Bow River No. 1, drilled in LSD 15, Section 12-25-5w5, was last year abandoned at 5,585 feet without a show; but the Imperial geologists think sufficiently well of the structure to start a second test at a point somewhat higher, where the producing horizon is expected to be within reach of the drill. No. 2 location is about 2 miles south of No. 1.

Morley Reserve

In the Morley Reserve area, Wabash Oils, which got the top of the lime at 1,483 feet, is drilling at 1,849 feet without commercial production, though both oil and gas indications have been met in the lime. The drill is now in alternating light and dark sands similiar to those which, in the Turner Valley, immediately overlie the big production.

In the Highwood district, south of the Turner Valley, Imperial Oil, Ltd., Highwood No. 1, LSD 3, Section 36-18-3w5, has the diamond drill outfit installed to deepen the hole from 3,624 feet.

In the Skiff Field, southern Alberta, Imperial-Davenish's No. 3 is working on derrick about 1,000 feet south of No. 1 producer. The combination rotary-standard outfit from Imperial-Devenish's No. 2 is being dismantled and moved to the new site.

In the De Winton district, near Calgary, Anglesey-Lakeview's No. 1, LSD 1, Section 22-21-1w5, is at 4,550 feet and shut down waiting for casing.

Investigations of oil possibilities in northern Alberta have been carried on recently by geologists of the Canadian Exploration Co. of Denver. This company controls the Frontier Development Co., whose No. 1 test is drilling in the Wildcat Hills near Cochrane. The Canadian Exploration Co.'s geologists are reported to have examined a number of structures between Wainwright and Clearwater, covering several hundred miles north and south. H. W. Lowrie has returned to Denver after two months spent in Alberta in connection with the company's survey work.

On the Beaver Dome, southern Alberta, Madison Oils, LSD 10, Section 24-2-11w4, is drilling at 585 feet after getting a small flow of gas between 515 and 520 feet. The log indicates that the test will get the top of the Dakota at 1,400 feet. Range Oil & Gas Co.'s No. 2, LSD 6, Section 21-1-11w4, is drilling below 300 feet. In the Chin district, Lethalta Oils, LSD 5, Section 33-8-18w4, is reported drilling around 2,100 feet. In the Cypress Hills, Eagle Butte Oil Co., LSD 3, Section 31-7-4w4, is drilling around 2,470 feet.

Wainwright Field

In the Wainwright Field, Wainwell Oils' No. 3, LSD 9, Section 36-33-7w4, is drilling below 200 feet on a rotary test to be finished under contract by December 15. Production is looked for around 2,100 feet. Wainwell Oils' No. 2, LSD 15, Section 36-44-7w4, has resumed drilling and is making hole around 600 feet. Fabyan Petroleum's No. 1, LSD 8, Section 24-45-8w4, is in the producing sands and coring for lighter gravity crude. Wainwell Oils' No. 1, LSD 9, Section 36-44-7w4, is reported delivering its production to the Wainwell Oils' refinery, which is now in operation.

In the Viking Field, east of Edmonton, Hudson's Bay-Marland Oil Co.'s No. 1 deep test, which got gas production, estimated at 9,750,000 feet a day, in the Viking sand at 2,130 feet, is going deeper for a thorough test of the lower horizons. The well has been capped with a bradenhead, and new hole is now being made. No oil indications were met in the Viking sand, which is approximately the same depth as the oil sand in the Wainwright Field; but the possibilities of both oil and gas in the lower formations will be thoroughly tested.

Ontario Fields

Ontario, the test by Leo Wilson and associates in Lot 16, Concession 1, Moore Township, Lambton County, has finished a dry hole at around 2,550 feet in the "big red" formation. This test was close to the northwest and southeast line supposed to connect the gas discoveries near St. Clair, Mich., with the Dawn Field in Lambton County, and was generally regarded as a hopeful venture. Considerable leasing was done last spring and summer near Courtright, in Lambton, but it is not known what further development may be undertaken in this area.

Union Natural Gas Co.'s No. 27 on the summers farm, Lot 24, Concession 13, Dawn Township, has secured a good gas flow, around 1,500,000 feet a day, in the Salina formation at 1,650 feet. It is being carried deeper and is now drilling around 1,800 feet. Union's No. 26, Moorehouse farm, Lot 23, Concession 1, Euphemia Township, is drilling at 2,000 feet without a show. Union's No. 25, Childs farm, Lot 19, Concession 1, Dawn Township, in the west end of the field is drilling at 2,200 feet and looks like a dry hole.

In Dover Township, Kent County, Ajax Oil & Gas Co.'s No. 3, W. Jubenville farm, Dover East, is reported drilling around 1,550 feet. Ajax Oil & Gas Co.'s No. 2, Eli Jubenville farm, Dover West, which is in production in the Trenton limestone, has not yet been put on the pump, owing to trouble with the tubing.

In Tilbury East Township, Kent County, Union Natural Gas Co.'s No. 293, Lot 164, Talbot Road, near Port Alma, has finished a small gasser in the Tilbury sand.

In Middlesex County a local syndicate is reported to be drilling a test for oil on the McLean farm, East Williams Township.

MUSKEGON FIELDS

(Continued from Page 52)

has not yet been abandoned as the operators are considering drilling it deeper.

The Fink Development Syndicate's No. 1 Nash, SW NW Section 20-9-14, Ravenna Township, is drilling past a bit which has been lodged in the hole at about 800 feet for several weeks. Harry Harper's No. 1 Cook, NE NE Section 2-9-16, Fruitport Township, is about ready to drill. There is no activity on the other two wildcat locations in the county as yet.

In Laketon Township, Carl Prather, who drilled the first successful well on the property of John Thompson, SW NW Section 12-10-17, has shut it in for a gasser. It was making about 5,000,000 feet a day of gas and less than 100 bbls. of oil.

The Johnson Oil Refining Co.'s No. 1 Adams, NW SE Section 9-10-17, has a broken set of jars in the hole at 1,725 feet. The Reed Oil Co.'s No. 1 Young, SE NE Section 11-10-17, is drilling at about 1,800 feet and on the way to the Dundee formation. Nelson & Witt's No. 1 Andree, NW SE Section 12-10-17, also is drilling but above the Traverse formation.

Three tests are spudding. They are: Maire-Caswell-Kidder's No. 1 Schuler, NW NW Section 12-10-17; C. M. Bowers' No. 1 Lee, SE NW Section 1-10-17, and Murray Higgins and others' No. 1 Phelps, NW NE Section 1-10-17.

Rigs are moving in or being set up for three other tests in this new area: Bark & Pack's No. 1 Fenner, NW SE Section 11-10-17; Liberty Oil Co.'s No. 1 Metzke, SE NW Section 2-10-17, and the Buckeye Oil & Gas Co.'s No. 1 VanLoo, NW SW Section 11-10-17. The last is a new location. Another new location announced this week was for D. W. McElhany's No. 1 Launste, SE SE Section 1-10-17.

The Michigan Conservation Commission at a meeting this week in Lansing deferred final action on its decision to offer leases on State-owned property to the highest bidder until the next meeting, December 7.

All leases on which the lessees have not complied with the State oil law will be cancelled. Under this decision, 13 leases covering 346,000 acres, mostly in Schoolcraft County in the upper peninsula of Michigan, will be cancelled.

KEYSTONE COPPER STEEL

Black and Galvanized SHEETS

KEYSTONE COPPER STEEL

RUST-RESISTING

Corrugated Sheets, Special Sheets

Tank, Barrel and Keg Stock

Tin and Terne Plates, Etc.

Highest quality sheets and tin plates for every purpose. Use APOLLO-KEYSTONE Corrugated Sheets for boiler and belt houses, sheds, warehouses, roofing and siding in oil country construction. Sold by leading metal merchants. Our booklets *Facts* and *Better Buildings* have a real message for you.

For Tanks

Specify KEYSTONE quality—used by leading tank manufacturers. This material assures better tanks, barrels and drums; the alloy of copper gives greatest endurance and rust-resistance. Actual time and service have proved this.

Sheet Mill Products

Black Sheets for all purposes, Apollo and Apollo-Keystone Copper Steel Galvanized Sheets, Culvert, Flume and Tank Stock, Formed Roofing and Siding Products, Special Sheets for Stamping, Full Finished Sheets, Automobile Sheets, Electrical Sheets, Stove and Range Sheets, Barrel and Keg Stock, Etc.

AMERICAN SHEET AND TIN PLATE CO. APOLLO BEST BLOOM KEYSTONE COPPER STEEL PITTSBURGH

Tin Mill Products

American Coke and American Charcoal Bright Tin Plates, Taggers Tin, American Old Style and American Numethodd Roofing Terne Plates, MF Roofing Tin Plates, Fire Door Stock, Black Plate for all purposes: Enamelling and Japanning Stock, Stove Pipe Stock and Elbow Stock, Special Stamping Stock, Etc.

Manufactured by

American Sheet and Tin Plate Company

General Offices: Frick Building, Pittsburgh, Pa.

DISTRICT SALES OFFICES

Chicago Cincinnati Detroit New Orleans New York Philadelphia Pittsburgh St. Louis

Export Representatives: United States Steel Products Company, New York City

Pacific Coast Representatives: United States Steel Products Company, San Francisco, Los Angeles, Portland, Seattle

CALIFORNIA FIELDS

(Continued from Page 60)

ment a few weeks ago by showing oil in a heretofore uncharted oil sand at approximately 3,200 feet, has just passed the 4,000-foot level.

Ventura Avenue

If operators in the Ventura Avenue Field complete their present drilling program on schedule the daily production of this field will probably show an increasing tendency during the next several months. This uptrend should be especially conspicuous early next year as there are a number of potential producers scheduled for completion after the Christmas holidays. Several new wells should also be finished during November and the early part of December as the three major operators are all pursuing a progressive development campaign. The Associated has just finished No. 8 Ventura Land & Water and it should be tanking oil within the next 24 hours. This new well was carried down to the 7,500-foot level and finished with a 5¾-inch oil string carrying 1,505 feet of perforated. The Associated has several other wells scheduled for early completion, included in which are No. 10 Hartman, now down 7,513 feet, and No. 3 Ventura Land & Water at 7,500 feet. The Petroleum Securities should finish No. 5 Orton next, followed by Nos. 1 and 4 on the Willett lease in the order named. The Shell also has several wells nearing completion, one of which, No. 25 Edison, nearly got beyond control during the past week. The crew was fishing for a core barrel at 6,820 feet when the well began to flow but it was successfully killed and will be completed soon. The Bolsa Chica Oil Co. has revised its completion program on No. 3 Hartman, located in the northern part of the field, and it is the present intention to carry this project down to approximately 7,100 feet.

Rincon

The Richfield Oil Co.'s deep test in the Rincon Field of Ventura County has given operators in this field a new lease on life as the outlook for deep production is exceptionally promising. This well, which developed mechanical trouble at 6,519 feet and necessitated an extensive redrilling job, is scheduled for an early test. The hole is not in a very satisfactory mechanical condition but Richfield officials are nevertheless hopeful that substantial production will be secured. This well is of extreme importance at the present time as it will undoubtedly result in an extensive deepening campaign if deep commercial production is secured. The several upper zones in this field have failed to sustain the intensive drilling which has characterized development work in the productive area lying immediately adjacent to the ocean front.

The Muscle Rock section of the Rincon Field also took on a rather favorable outlook during the past week due to a reported oil sand of undetermined potentiality found in the Elmer Oil Co.'s No. 1 Shoals at 4,038 feet. The Muscle Rock area is located a little over a mile northwest of the present productive area at Rincon and will change the entire outlook if commercial production is developed. The Rincon Field is located on the western extremity of the 16-mile Ventura Avenue anticline at the point where it plunges out into the Pacific Ocean. The axis of this anticline swings to the northwest after leaving Rincon and thus extends through the Muscle Rock area. The Elmer Oil Co.'s No. 1 Shoals is the most interesting project under way in the Muscle Rock area at the present time and it is consequently being watched closely, although the company has thrown a curtain of secrecy around its operations.

Midway-Sunset

There were no developments of special importance in the Midway-Sunset Field of Kern County during the past week with the possible exception of the fact that the North American Consolidated made several hunred additional feet of hole in its No. 7, located in Section 16-32-23. This well, which was rotating ahead a few days ago in a hard brown shale at 3,298 feet, is situated about midway between the recently discovered second zone in Section 7-32-23, found by the Republic Petroleum Co., and a similar discovery by the Union in its No. 1 Western Petroleum in Section 27-32-23, approximately 4 miles southeast. The Union, incidentally, has not yet succeeded in developing commercial production in its initial test and it is the present intention to open up a little more hole. Drilling will be resumed in No. 1 Western Petroleum at 2,160 feet with a possible completion around the 2,500-foot level. The Republic Petroleum's No. 31 in Section 7-32-23 is still holding up to its initial production of 2,460 bbls. and no immediate substantial decline is anticipated as these producers usually settle gradually. No. 25, the deep-zone discovery well of the Republic Petroleum in Section 8-32-23, has been taken off production and will be deepened. No. 32, which officials thought would be an exceptionally large well, is somewhat of an enigma as the greater part of its current production is water, notwithstanding the fact that several hundred feet of good-looking oil sand was opened up previous to completion at 3,605 feet.

A. L. Marsten's No. 1 Fruitvale, a recent completion which extended the outer limits of production in the Fruitvale Field of Kern County about 2,000 feet southeast, has been taken off production preparatory to being deepened. This well, located in Section 27-29-27, showed an initial daily production of 140 bbls. upon completion but it is thought that the output can be greatly stimulated by the addition of a few hundred feet of hole, especially in view of the fact that the largest producer in the field is located only a few hundred feet away. The Pacific Eastern is extending the scope of its operations in this field and two new wells, No. 1 Farrel in Section 21-29-27, and No. 1 Martin in Section 22-29-27, should be making hole within the next few weeks. Very little work is under way in the Round Mountain Field of Kern County but drilling operations at Mount Poso are increasing notwithstanding the fact that refiners do not desire this heavy unrefinable crude. The General Petroleum's new 8-inch pipe line, being laid from the Mount Poso Field to its Young lease on the west front of the Kern River Field, is nearing completion and will probably be in operation within a short time unless an agreement can be reached with property owners to permit a temporary suspension of production.

SOUTHWEST TEXAS

(Continued from Page 52)

north offset to the Texas Gas Co. (now Benedum & Trees) discovery oil well No. 1 Heard, on the south end of the field. The well's total depth is 4,992 feet and it is in a sand that looks like oil. For over a week the crew has been trying to set casing. It hung first at 4,200 feet and the crew pulled and reamed down and ran casing again and now it is stuck. Also Rutherford & Pearson's No. 1 O'Brien, the farthest north well in the field drilling, which missed the 3,700-foot pay is down approximately 4,200 feet and arranging to set casing and test a sand that has not been developed anywhere in the field heretofore.

These two wells and one other are the next to be watched for interesting developments. The other well is the No. 1 Mitchell being drilled by W. L. Pearson. It was a dry hole at 3,000 feet drilled by Houston Gulf Gas. Pearson has started to deepen and got on bottom last week and started making new hole. This well and the No. 1 O'Brien of Rutherford & Pearson are not shown on the map published October 11. The No. 1 Mitchell is 3,000 feet due northwest from the Texas Gas Co.'s No. 2 Holmes Heard, which came in last week an oil well and Rutherford & Pearson's No. 1 O'Brien is 5,000 feet due northeast from the Larson-Walsh No. 1 Strauch. Benedum & Trees are drilling west and south offsets to the discovery oil well in the south end

of the field which they bought from the Texas Gas Co. but these wells will not be down to pay depth for some days yet.

Joe Bruner Field

In the Joe Bruner Field the element of interest the past week is the Towns' No. 1 Hickman a mile to the north and a little east and the Ratcliff and others' No. 1 Cora Malone, a mile south, each getting the top of the Austin chalk high. The situation had not changed particularly from a week ago with reference to other wells in the field, except that there are several new rigs moved in or moving in. The M. K. Towns' No. 1 Hickman, is in the SE cor. of a 10-acre tract in the NW cor. of S half of the Gerren Hinds Survey and with an elevation of 391 feet it topped the Austin chalk at 2,254 feet, which is the highest of any well in the field.

Sun Oil Co.'s No. 1 Malone, the discovery Edwards lime well, with an elevation of 410 feet, topped the Austin chalk at 2,327 feet and the Ratcliff and others' No. 1 Cora Malone, on the south end of the field with an elevation of 373 feet topped the Austin chalk at 2,310 feet. Sun Oil Co.'s well is about 2,000 feet northwest of a straight line between the Towns well on the northeast and the Ratcliff well on the southwest. Carl Brothers and J. S. Suttle's No. 1 Cora Malone, 2,000 feet northeast of the Ratcliff well and on a line with it and the Towns well, has an elevation of 384 feet and topped the Austin chalk at 2,317 feet. It stopped at the base of the Austin chalk and is swabbing daily about 60 bbls. of oil. The Towns and Ratcliff wells will drill to the Edwards.

Lutex Oil, Inc., late in the week had not plugged off all the water in the No. 2 Wilson which drilled through the second cap in the Edwards, and Golden West had not yet plugged off the water in its No. 2 Wilson which drilled through the first cap in the Edwards. Sulphur and salt water was found below both the first and second caps and very little oil. Above the first cap is oil and seemingly no water. The salt water is not found in the old Luling Field 5 miles northwest and running parallel to the Joe Bruner Field. Larson-Walsh's No. 1 Watson and Pat Armstrong's No. 1 Martin, both of which are west of the fault line, are trying to make wells in the Austin chalk. The first is rigging up standard equipment and the other is setting casing. Armstrong believes he drilled through the fault plane, cut out part of his chalk and got the Georgetown, and got it high. One fossil was found which seemed to bear out this idea but many believe it is still in the chalk. At any rate both it and the Larson-Walsh wells look like producers in the Austin whether they get anything deeper or not.

Laredo District

Usher Carson has a 50 to 75 bbl well in his No. D-5 Webster in the Carolina-Texas Field in Webb County in sand at 2,614-23 feet with casing set at 2,614 feet. It is on the south edge of the Carolina-Texas Field, which has been mainly a gas field but has shown oil in some wells and is a quarter of a mile south of the Associated-Carson No. D-2-A which came in making a big volume of oil at this depth a few years ago but was circled with offsets all dry. There are no dry holes to the south of the new well for some distance and it has a chance of opening a pool.

Three wells were completed in the Albercas Pool in southeastern Webb County last week one of them a 10,000,000-foot gasser flowing about 200 bbls. of oil and one 15,000,000-foot gasser making about 200 bbls. of oil and another 15,000,000-foot gasser spraying oil. The three are in a line and are offset by oil wells on the east and they seem to mark definitely the line between oil on the east and gas on the west.

Magnolia's No. 11 Yeager-Strohman in sand at 2,165-75 feet came in a 10,000,000-foot gas well spraying oil which increased to 200 bbls. Sun Oil Co.'s No. B-5 Yeager-Strohman, a south offset to it came in from sand at 2,152-61 feet for 15,000,000 feet of gas spraying oil and Sun Oil Co.'s No. B-4 Yeager-Strohman, a little more than one offset due south of it came in from sand at 2,162-66 feet for 15,000,000 feet of gas and 200 bbls. of oil. O. W. Killam in his No. 25 Bruni and No. 26 Bruni each in Block 64 of the Albercas Grant is trying to coax the field off to the northeast. His No. 25, the farthest away, is down 2,771 feet and failed to get the regular sand. His No. 26 is down to sand at 2,202-04 feet and has showed oil through a drill stem tester. It is at about the right depth to get production.

In the Schoolfield-O'Byrne Pool in Duval County the farthest north pool in the Laredo District, Sun Oil Co. is bringing in the third producer to be completed in the field. It is running tubing to its No. 1 Henne-Winch, an east offset to the discovery well. The sand depth is 2,339-45 feet and it swabbed 220 bbls. It is an east offset to the discovery well. Magnolia Petroleum Co.'s No. B-1 Hahl, a quarter-mile due north of the discovery well at 2,345-46 feet on a test showed oil and gas. The second well completed in the field and reported last week was the Schoolfield-O'Byrne and W. L. Pearson No. 1 Krauter a south offset to the discovery well.

Schoolfield-O'Byrne & Pearson tested a sand at 1,614-19 feet in their No. 1 Bowe about 1,600 feet southwest of their No. 1 Krauter, but the sand was dry and it is drilling deeper to the regular sand of the field. The Texas Company is getting started on its southeast offset to the discovery well.

COMPLETIONS

Caldwell County

Magnolia Petroleum Co.'s No. B-1 A. J. Brown Estate, John Henry Survey, Luling Field has been completed at 2,185 feet for 10 bbls.

Refugio County

Texas Gas Co.'s No. 1 Holmes Heard, C of Lot 2, Block 8, Refugio Townsite tracts in the Refugio gas field at 3,701 feet has been completed flowing 500 bbls. daily through quarter-inch choke. Storage is being built.

George E. Smith's No. 2 Rose Rogers, at 3,650-95 feet tested gas with 1,450 pounds rock pressure and is estimated good for 60,000,000 feet daily.

Webb County

Magnolia Petroleum Co.'s No. 11 Yeager-Strohman, Share 5 Albercas Field completed at 2,175 feet is making 25,000,000 feet of gas and spraying oil. Later made 200 bbls. of oil.

Sun Oil Co.'s No. B-4 Yeager-Strohman, Share 5, Albercas Field completed at 2,161 feet is making 15,000,000 feet of gas and spraying oil.

Sun Oil Co.'s No. B-5 Yeager-Strohman, Share 5, Albercas Field has been completed at 2,172 feet for 15,000,000 feet of gas and 200 bbls. of oil.

Usher Carson's No. D-5 Webster, Survey 684, Carolina-Texas gas field completed at 2,623 feet estimated at 50 to 75 bbls. of oil daily.

TESTS ABANDONED

Caldwell County

Fred Adams & Lyles' No. 1 Oran W. Cliett, S. B. Morrison Survey is dry and abandoned at 1,647 feet in the Edwards.

Texas Company's No. B-1 Branyon, John R. Miller Survey, at 2,206 feet lost hole and is being abandoned.

DeWitt County

Pilgrim Oil Co. has abandoned location made in the William G. Hill Survey, 6 miles west of Yorktown.

Empire Southern Oil Co.'s No. 2 Smith, Survey 3, due west of Cuero has been abandoned at 3,150 feet.

Goliad County

C. W. Simpson's No. 1 Ideus, W. H. Pendleton Survey, 12 miles southeast of Yorktown is abandoned at 2,323 feet.

Hays County

J. E. Rodgers' No. 1 E. Hohenburg, 2½ miles east of San Marcos has been abandoned at 2,189 feet, rig still standing.

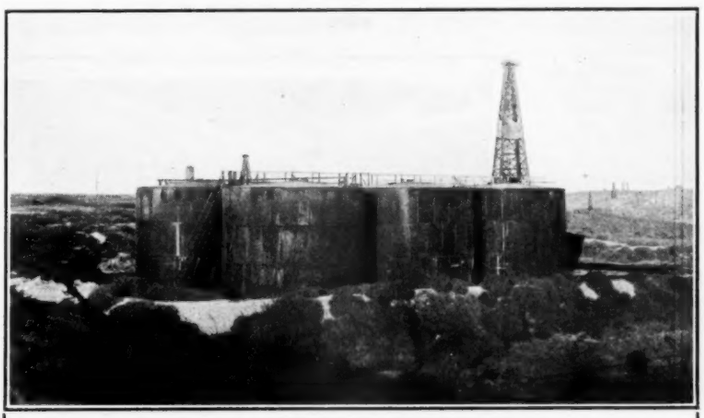
Nueces County

Alamo Drilling & Leasing Co.'s No. 1 Gallagher, Survey 158, at 3,011 feet is dry and abandoned.

San Patricio County

Saxet Gas Co.'s No. 3 White Point

KEYSTONE COPPER STEEL



A battery of six 3,000-Bbl. Maloneys erected for the Dixon Creek Oil Co., Borger, Texas, August, 1926.

FAMOUS FOR LONGEVITY!

MALONEYS are famous throughout the oil fields as the longest-lived bolted steel tanks on the market. This exceptional durability is assured by manufacture of highly rust-resisting Keystone Copper Steel.

Other MALONEY advantages include: our patented "crimp" which promotes accurate fit at seams and joints; our special pliable rubber gasketing; our Gaso cement; rigid reinforcing of seams with strong steel channels; bolts of 90,000 pounds tensile strength; large cleaning out plates set flush with bottoms; Maloney special pearl gray paint; and the best and latest valves and thief hatches the market affords.

"Alone in Quality"

MALONEY TANK MFG. COMPANY
Tulsa, Okla., U. S. A.

Distributors at all Principal Petroleum Points

Sizes: 12 to 10,000 Barrels

Packed in Steel-Bound Crates for Export

Howell Aluminum '4-in-1" Vacuum Pressure Valve and Thief Hatch —The BEST and LATEST Deck Equipment—POSITIVE Safety

MADE OF KEYSTONE COPPER STEEL

MALONEY PATENTED BOLTED COPPER-STEEL TANKS

MADE OF KEYSTONE COPPER STEEL

MALONEY

"ALONE"

150 Pounds Pressure

CRANE VALVES

2500 Pounds Pressure

CAST STEEL DRILLING-THROUGH GATE VALVES IN CRANE FACTORY STOREROOM

Mr. Oil Producer and Drilling Contractor:

When your wells come in at high pressures, remember that we carry a large stock of Drilling-Through Cast Steel Gate Valves for *1500 pounds working pressure,* as shown in the above picture.

These valves are tapped A.P.I. Standard D.B.X. and D.B.8 casing threads.

We also carry a large stock of parts to be made up with casing threads not regularly carried in stock. Cast steel drilling-through valves are carried in stock at the field stores in all oil fields.

Data and full description of this valve and casing threads are outlined in our *Circular No. 212*, which will be mailed to you upon request.

CRANE

Address all inquiries to Crane Co., Chicago
GENERAL OFFICES: CRANE BUILDING, 836 S. MICHIGAN AVENUE, CHICAGO
NEW YORK OFFICE: 23 W. 44TH STREET
Branches and Sales Offices in One Hundred and Seventy Cities
National Exhibit Rooms: Chicago, New York, Atlantic City, San Francisco, and Montreal
Works: Chicago, Bridgeport, Birmingham, Chattanooga, Trenton; Montreal, and St. Johns, Quebec; Ipswich, England
CRANE EXPORT CORPORATION: NEW YORK, SAN FRANCISCO, MEXICO CITY, HAVANA
CRANE LIMITED: CRANE BUILDING, 1170 BEAVER HALL SQUARE, MONTREAL
CRANE-BENNETT, LTD., LONDON
CIE CRANE: PARIS, BRUSSELS

Development Co. is dry and abandoned at 2,300 feet.

Saxet Gas Co.'s No. 1 State (Sidney Katz) Survey 688, (submerged land) at 2,927 feet is dry and has been abandoned.

Val Verde County

East Del Rio Oil Co.'s No. 1 Russell, Section 183 is dry and abandoned at 3,325 feet.

Victoria County

J. J. Elam's No. 1 Vol Kutckka, 2 miles southeast of Inez is dry and abandoned at 1,420 feet.

Houston Oil Co.'s No. 1 McFaddin, Survey 14, 11 miles northeast of Victoria is dry and abandoned at 745 feet.

Travis County

J. W. Maddox's No. 1 Ecklund, P. McElroy Survey, location only, has been abandoned.

Girven & Watson's No. 1 Zimmerman, G. Davis Survey, has abandoned location.

Jim Hogg County

Magnolia Petroleum Co.'s No. 40 Merchants State Bank, Survey 415, Randado Field at 1,630 feet is dry and has been abandoned.

Zapata County

R. V. Hill's No. 3 Ramirez, Survey 627, has been abandoned dry at 726 feet.

NEW LOCATIONS MADE

Atascosa County

Allaun & Cosden's No. 1 Share, William Caruthers Survey No. 366, is location 150 feet to CNL.

Bastrop County

Gulf Production Co.'s No. 1 Bell, J. Riley Survey, is location in east central part of lease.

Bexar County

F. H. Eckert's No. 2 Dobrowolski, Section 4, Block No. 52, is location 300 feet north of the No. 1.

Caldwell County

Tackleberry's Gerren Hinds Survey, southeast of Towns' No. 1 Hickman has derrick up and moving in machinery.

Cranfill & Reynolds' No. 1 W. L. Smith, A. Floyd Survey, Bruner Field, 150 feet south and west lines has derrick up and rig moving in.

Gonzales County

Alexander & Smith's No. 1 Billings, G. Gwinn Survey, is location in NW cor.

Jim Hogg County

Magnolia Petroleum Co.'s No. 41 Merchants State Bank, Survey 155, Randado Field, 150 feet to north and east lines is moving on.

Refugio County

Houston Gulf Gas Co.'s No. 3 Rea, Block 5, is location.

Maverick County

Rycade Oil Co.'s No. 3 Chittim, is location near the No. 1 Chittim.

Zavala County

Ike T. Pryor's No. 1 fee, is drilling at 1,180 feet in gas sand.

Webb County

Rycade Oil Corp.'s No. 3 Yeager-Strohman, Share 5, Albercas Field, 450 feet to N line and 150 feet to E line is drilling at 1,575 feet.

Sun Oil Co.'s No. A-7 Yeager-Strohman, Share 5, Albercas Field, 3,175 feet to N line and 150 feet to W line has derrick up.

Callaghan Land & Pastorial Co.'s No. 3 Callaghan, Survey 440, located 2,144 feet to S line and 1,482 feet to E line is moving on.

Cole Gas Field—Duval

O'Hern & Seacord's No. 6 Benavides, Survey 172, located 3,125 feet to north and west lines, is drilling at 2,456 feet.

Humble-Reiter-Foster Pool

Humble Oil & Refining Co.-Reiter-Foster's No. 10 Kohler, Survey 166, located 165 feet to east line and 1,605 feet to south line, is rigging up; No. 11 Kohler, Survey 395, located 1,155 feet to north line and 165 feet to west line, is rigging up.

Schoolfield-O'Byrne Field

Magnolia Petroleum Co.'s No. 1-B C. W. Hahl, Survey 61, located 3,081 feet to east line and 150 feet to south line, has sand at 2,345-48 feet which tested oil and gas on Halliburton test; No. 2-A C. W. Hahl, Survey 51, located 150 feet to south and east lines, is drilling at 2,158 feet. Sun Oil Co.'s No. 1 W. P. Norton, Survey 250, located 150 feet to south and east lines, is moving in machinery; No. 1 Henne-Winch, Survey 250, located 150 feet to south and west lines, is bailing in sand at 2,339-45 feet. Schoolfield-O'Byrne & Pearson's No. 1 Bowe, Survey 250, Block 21, located 150 feet to north and east lines, is drilling at 2,000 feet; No. 2 Krauter, Survey 250, Block 10, located 550 feet to east line and 150 feet to south line, is rigging up. The Texas Company's No. 1 Hahl, Survey 250, Block 18, located 150 feet to north and west lines, is rigging up.

Randado Field—Jim Hogg

Magnolia Petroleum Co.'s No. 40 Merchants State Bank, Survey 415, located 3,160 feet to west line and 200 feet to south line, is drilling at 1,340 feet. T. J. Conway's No. 1 C. Palacious, Survey 232, Block 6, located 175 feet to north and east lines, is drilling at 1,165 feet.

Alworth Pool

Alworth-Stevens-Hild's No. 13 M. Garza, Survey 39, Block 9, located 115 feet to northwest lines and 630 feet to northeast lines, is standing at 1,020 feet.

Reiser Field—Webb

Marts & Beavins' No. 1 Johnson, Survey 1,617, Block 9, located 500 feet to north line and 100 feet to west line, has sand at 2,052-53 feet. R. C. Holsworth's No. 1 Wheatley, Survey 1,569, Block 3, located 847.7 feet to north line and 305.2 feet to east line, is standing at 1,481 feet.

Mid-Ojuelos Field

Aviator Gas Co.'s No. 1 E. Garcia, Survey 606, Block 11, located 150 feet to south and east lines, has sand at 1,605-10 feet.

Albercas Field

O. W. Killam's No. 25 Bruni, Block 64, located 1,002 feet to north line and 1,247 feet to east line, is coring in sand at 2,485 feet; No. 26 Bruni, Block 64, is drilling at 800 feet; No. 1-M Bruni, Block 11, located 1,470 feet to north line and 293 feet to west line, is drilling at 800 feet. Magnolia Petroleum Co.'s No. 11 Yeager-Strohman, Share 5, located 450 feet to east line and 150 feet to south line, has sand at 2,165-75 feet; No. 13 Yeager-Strohman, Share 5, located 150 feet to west line and 750 feet to south line, is rigging up. Houston Oil Co.'s (Rycade) No. 2-A Yeager-Strohman, Share 5, is location 381 feet to north line and 2,248 feet to east line. Sun Oil Co.'s No. 4-B Yeager-Strohman, Share 5, located 150 feet to south line and 450 feet to east line, is coring at 2,156 feet; No. 5-B Yeager-Strohman, Share 5, located 150 feet to north line and 450 feet to east line, has sand at 2,162-66 feet.

Aviator Field

G. C. Salley's No. 1 Puig, Carter-Pinkton tract, 220 feet to west line and 150 feet to south line, has rigged up and is standing. Suladie & Mimms' No. 1 Puig, 450 feet to east line and 155 feet to north line of Puig (Kirkpatrick) tract, is drilling at 700 feet.

Carolina-Texas Pool

Usher Carson's No. 5-D Webster, NW SE, Survey 684, located 150 feet to north lines, at 2,621 feet is standing 550 feet in oil, amount of oil increasing from 250 feet last week. C. R. Miller's No. 1 de la Garza, Survey 48, Block 47, located 150 feet to north and east lines, is standing at 1,000 feet.

Andrews Field

Gleason Oil Co.'s No. 2 Benavides, Survey 11, Block 11, located 300 feet to northwest lines and 250 feet to northeast lines, is standing at 1,000 feet due to water shortage.

Jennings Field—Zapata

O. W. Killam's No. 5 Cuellar, Cerrito Blanco grant, 1,000 feet to southeast lines and 670 feet to southwest lines of 160-acre Cuellar tract, is rigging up; No. 6 Cuellar, same grant and tract, has derrick up. South Texas Production Co.'s No. 1 Jennings, Cerrito Blanco grant, 8,890 feet to southwest lines and 8,750 feet to southeast lines, has set 10-inch casing at 550 feet. Killam-Duggan's No. 3 Cuellar, Cuellar tract, 3,037 feet to northeast lines and 3,300 feet to northwest lines, is drilling at 2,200 feet.

Magnolia-Cole Oil Field

Cole Petroleum Co.'s No. 65 Benavides, Survey 412, Block 4, located 1,060 feet to west line and 160 feet to north line, has derrick up. Houston Oil Co.'s No. 4-D Benavides, Survey 753, Block 13, is location 160 feet to south line and 822.5 feet to east line; No. 15-D Benavides, Survey 753, Block 12, located 662 feet to south line and 160 feet to west line, has been spudded in; No. 17-D Benavides, Survey 753, Block 5, is location 160 feet to south and west lines. Magnolia Petroluem Co.'s No. 10 Valdez, Survey 754, Block 16, located 150 feet to south line and 1,150 feet to west line, is drilling at 2,321 feet; No. 12 Valdez, Survey 754, Block 16, located 750 feet to south line and 650 feet to west line, has derrick up.

Roxana-Larremore Field—Caldwell

Roxana Petroleum Corp.'s No. 1 Wilms, Cornelius Crenshaw Survey, is location 150 feet to north and west lines.

Luling Field

M. W. Koening's No. 7 Tiller, John Henry Survey, 300 feet east of No. 6, at 2,108 feet in Edwards, due to good core in Austin, will test on drill stem test in that formation before setting casing to complete in Edwards lime. Magnolia Petroleum Co.'s No. 13 W. J. Tiller, John Henry Survey, 150 feet to southwest lines and 450 feet to southeast lines, is drilling at 1,740 feet; No. 8 Branyon, Nancy Reaville Survey, SE cor., is drilling at 2,143 feet.

Joe Bruner Field

Pat Armstrong's No. 1 E. Martin, A. Floyd Survey, 150 feet to northeast lines and 410 feet to southeast lines, setting casing at 2,680 feet. Abercrombie & Co.'s No. 1 Lida Moses, A. Floyd Survey, 150 feet to north and west lines, is drilling at 1,200 feet. Carl Brothers-J. S. Suttle's No. 1 C. W. Malone, A. Floyd Survey, 150 feet to northwest and north east lines at 2,554 feet is swabbing 60 bbls. daily from the Austin. Golden West Oil Co.'s No. 1 Cook, A Floyd Survey, 480 feet to northeast lines and 170 feet to northwest lines, is standing at 2,226 feet; No. 2 Joseph Wilson, same survey, 150 feet to northwest and northeast lines, at 2,717 feet is plugging back 12 feet with lead wool to shut out water; No. 3 Joseph Wilson, same survey, 450 feet to northwest lines and 150 feet to southwest lines, at 2,645 feet is pumping 220 bbls. oil daily free from water.

T. C. Hadley's No. 1 Tiller, Gerren Hinds Survey, is in Buda at 2,780 feet; No. 2 Wilson, J. Radford Survey, is drilling at 2,540 feet in chalk. M. S. Holladay's (Barlow) No. 1 Bouldin, 4 miles northeast of Luling, at 3,070 feet is shut down. Larson-Walsh's No. 1 Fred Watson, Solomon Seal Survey, 150 feet to northeast and southeast lines, at 2,749 feet is rigging up with standard equipment to pump. Lu-Tex Oil, Inc's., No. 2 Wilson, A. Floyd Survey, 150 feet to northwest and northeast lines, at 2,719 feet cored into sulphur water, plugged back with lead wool and is making sulphur and salt water and very little oil; No. 3 Frank Davis, A. Floyd Survey, 150 feet to northeast and southeast lines, is rigging up; No. 4 Frank Davis, same survey, 300 feet west of No. 1 Davis, discovery well in the Austin, is location. Luling Oil & Gas Co.'s No. 3 Carter, Gerren Hinds Survey, 300 feet north of No. 1 Carter and 150 feet east of the road, at 2,770 feet is setting liner.

Plum Creek Oil Co.'s No. 1 E. L. Mayton, Hector McNeil Survey, in center of survey, is shut down at 240 feet after setting surface casing, rig moved off to drill another test. H. C. Ratcliffe and others' No. 1 Cora Malone, A. Floyd Survey, 150 feet to north and west lines, is in top of chalk at 2,302 feet. Sun Oil Co.'s No. 2 Malone, A. Floyd Survey, 300 feet northeast of No. 1 discovery well in the Edwards lime, at 2,277 feet is drilling in top of the chalk. M. K. Towns' No. 1 W. W. Hickman, Gerren Hinds Survey, 150 feet to north and west lines, is drilling at 2,550 feet. Wheelock & Collins' No. 1 Orphanage, Isaac Weldon Survey, 300 feet east of railroad and 150 feet north of highway, is drilling at 3,100 feet.

Lockhart Area

Pat Armstrong's No. 1 Heidenheimer, John R. Miller Survey, 450 feet to north line and 150 feet to east line of lease, is building derrick.

Luling Field—Guadalupe

A. B. A. Oil Co.'s No. 4 Britton Harris, 300 feet to east line and 150 feet to south line of Britton Harris lease, is shut down at 1,250 feet for repairs on boilers. Magnolia Petroleum Co.'s No. 7 J. M. Roberts, Harriett Cottle Survey, 150 feet to southwest and southeast lines, is location; No. 4 N. J. Carter, Harriett Cottle Survey, 150 feet to northwest and northeast lines, is drilling at 2,070 feet.

Kingsville Field—Kleberg

Humble Oil & Refining Co.'s No. 4-B Dennett, Section 38, Block 19, located 436 feet to south line and 675 feet to east line, has set casing with sand at 2,459-69 feet, bailing showing oil and considerable water; No. 4 Flato, Section 40, Block 10, located 250 feet to east line and 450 feet to north line, at 2,790 feet is drilling and will set casing to test expected sand at 2,928 feet.

Agua Dulce Field—Nueces

Alexander and others' No. 1 J. J. Eliff has derrick timbers on the ground; No. 2 J. J. Eliff is location. Davis, Horn and others' No. 1 Thomas Ragland, Manton & Briggs Subdivision, SW cor. Lot 13, has set surface casing at 416 feet. Agua Dulce Oil & Gas Co.'s No. 1 John O. Sponberg, George H. Paul Subdivision, SW SW Section 87, is drilling at 1,700 feet. Houston Oil Co.'s No. 1 Talbert, Survey 2, Block 5, located 1,139 feet to north line and 155 feet to west line, is drilling at 1,970 feet. R. & G. Corp.'s No. 1 H. G. Yakey, Richard King Survey, SW cor. Section 37, is location; No. 1 Ed Allen, Ross Peters Subdivision, Section 6, NW cor. Block 6, is drilling at 1,650 feet; No. 1 Bessie Kerr, Benton's Pasture, is location in NE cor. Section 36.

Saxet Gas Field

Saxet Gas Co.'s No. 4 Weil, 500 feet to west line and 200 feet to north line of Weil Brothers' tract, has derrick up and is moving in tools; No. 5 Dunn is location 1,500 feet southwest of No. 1 discovery gas well of the field.

Refugio Field—Refugio

Benedum & Trees' No. 2 Claude Heard, Block 1, C. Heard Survey, 300 feet west of No. 1, has been spudded in; No. 3 Claude Heard, 300 feet south, has spudded in. Houston Oil Co.'s No. 9 F. B. Rooke, T. Mullen Survey, 150 feet to south and east lines, is rigging up; No. 10 Rooke, about 2,000 feet northwest of discovery oil well, is rigging up; No. 11 F. B. Rooke, T. Mullen Survey, 150 feet to east line and 350 feet to south line, is rigging up.

Houston Oil Co.'s No. 4 Wilson Heard at 4,992 feet has 8 feet of sand showing oil and is trying to set casing which hangs at 4,200 feet; hole has been reamed and casing is being run again. W. L. Pearson's No. 1 Mitchell, 600 feet north of Refugio town lots and 250 feet west of Goliad road, is drilling at 3,100 feet. Pat Rutherford and W. L. Pearson's No. 1 J. M. O'Brien is in sand at 4,220 feet showing oil.

Agua Dulce Field

It looks like three more gas wells in the Augua Dulce Field in western Nueces County. Houston Oil Co.-Sun Oil Co.'s No. 1 Talbert, a direct east offset to the Grimm & Morris No. 1 Garrett, discovery well of the field, has set 8-inch casing at 2,018 feet after making a test that showed a good volume of gas and good rock pressure. It is a very few feet lower than the discovery well which has been making wet gas and it was hoped it would make an oil well. It will drill in this week.

Agua Dulce Oil & Gas Co., which is the present owner of the discovery well, is in the top of the gas sand in its No. 1 John O. Sponberg, a half mile northeast of the discovery well, and set casing Sunday at 2,022 feet. It is figured 7 feet lower than the discovery well and it looks like a gas well. The R. & G. Corp. No. 1 Ed Allen, a mile south of the discovery well, was coring at last reports at 2,034 feet and, according to check of the leg, is running about 35 feet lower than the discovery well and so should get the pay at about 2,045 feet or possibly a little below. It was within a few feet of the pay Saturday night. There is a chance that it is low enough on the structure to be an oil well but the first two will in all probability be gassers.

Davis, Horn and others, about 3 miles north of the discovery well, after setting

surface casing, are standing, and Alexander & Smith, a mile north of the discovery well, have spudded in. These wells are the only ones that have been started since the bringing in of the discovery well.

LA.-ARK. WILDCATS

(Continued from Page 51)

fourbles of drill stem out of the hole and partly wrecked the derrick. At last reports it was still running wild. What is more important is that it is apparently producing from a new gas sand topped at 2,460 feet. The well is an old one drilled originally by Arkansas Natural Gas Co. two years ago and completed as a 15-bbl. pumper at 1,952 feet. Known sands in the Panola Field are found at around 1,050, 1,950, 2,640 and 2,900 feet, the second having produced both oil and gas and the others gas.

Shelby County was the location of another gas show, though different from the Panola performance. Gulf Refining Co.'s No. 1 Pickering on the P. W. Harvey Survey, drilling in sandy lime, ran into a show of oil and gas at 3,243-4 feet and is running 6⅝-inch casing for a test.

In North Louisiana, Enochs and others bailed their No. 1 Enochs in Section 39-11-12, Tensas Parish, to test 23 feet of broken sand which was reported to have made a show of oil and gas from 3,546-69 feet. They set 4½-inch and packer on the bottom, washed and the well started flowing hot salt water. Dixie Oil Co.'s deep test in Claiborne Parish, No. 1 Gilbert in Section 27-21-5, near Lisbon, is drilling a sand at 2,878 feet but no show has been reported from it.

Dupont Report Denied

Newspaper reports have stated that the Dupont interests were assembling a big block in western Union County, Arkansas, and planned to drill three deep holes, but representatives of those interests here denied the reports stating that they are not interested in anything anywhere in south Arkansas. They are, however, buying production in the Greenwood and Waskom gas fields in Caddo Parish and Harrison County, Texas, and wildcat stuff along the Caddo-DeSoto Parish line and also in the Elm Grove and Bossier Parish wildcat areas.

R. J. Thorne, of Chicago, and R. R. Bossier and H. H. Alvord, of Shreveport, have formed a partnership as the Thornoil Co. and are curing titles on a block of 5,000 acres adjoining R. O. Roy's 13,000 acres in Township 13, Ranges 13 and 14, DeSoto Parish, on which they plan to go 3,000 feet unless they get the gas Roy got around 2,800 feet in his well on the Fuller land in Section 6-13-13. Luke Case, trustee, has made a location on the Boatright land in Section 3-10-13.

Smitherman & McDonald's first test below the Haynesville sand in the deep well they are drilling on the Miller farm in Section 17-23-8, resulted in salt water at 3,150 feet. They are drilling now in lime at 3,240 feet. Carter & Wingfield were bailing to test No. 2-A Clark in Section 7-23-1e, Union Parish, where they claim 10 feet of sand, total depth 2,295 feet. Some production about 100 to 150 bbls. all told, has been developed at around this level.

With 10 feet of sandy shale at the bottom, total depth 3,592 feet, Atlantic Oil Producing Co. is reaming to the bottom preparatory to making a test on No. 1 Moffatt in Section 28-16-8, Ashley County, Arkansas. In Chicot County, San Hunter made two dry drill stem tests on No. 1 Sawyer in Section 19-18-2w, one at 2,972 feet and the other at 2,991 feet and is drilling sand rock at 3,076 feet.

Western Union County has another deep test 3,000-3,500 feet under way in E. L. Foster's No. 1 Murphy Land Co. in Section 22-17-17, on which he has rig up. Imperial Oil & Gas Products Co.'s No. 1 Goodwin in Section 26-17-16, tested salt water at 2,586-91 feet and is coring after testing water at 3,387 feet and cementing back to 2,100 feet where they whipstocked 8-inch casing. Test at 2,583-86 feet also was salt water.

Louisiana Public Utilities Co. and Hamiter and others' wells were the only wildcat completions during the week. The former's No. 1 Rives in Section 14-12-12, DeSoto Parish, gauged 500,000 feet of gas at 1,100 feet and the latter's No. 1 Hamiter in Section 10-23-13, Bossier Parish, west of Plain Dealing, was dropped from the list as a salt water hole at 1,870 feet, having been idle since the test was made in February.

NORTH LOUISIANA

Bossier Parish

Morgan Oil Co.'s No. 1 Smith, Section 26-19-11, is drilling at 1,865 feet. Triangle Drilling Co.'s No. 1 Bulkley, Section 9-20-13, is drilling hard lime at 3,523 feet.

Caddo Parish

Gulf Refining Co. is drilling lime and shale at 4,258 feet in No. 1 Attaway, Section 1-18-15. Tidal Oil Co.'s No. 1 McCrary, Section 23-19-16, is shut down at 600 feet. Woodley Petroleum Co. set 200 feet of 10-inch on No. 1 Whitehurst, Township 16-12.

Catahoula Parish

The Texas Company's No. 1 Tensas, Section 4-10-6, is drilling sandy shale at 3,310 feet.

Claiborne Parish

Dixie Oil Co.'s No. 1 Gilbert, Section 27-21-5, is in a sand at 2,878 feet. El Dorado Chief Oil Co. is shut down on No. 1 Baker, Section 26-20-7, at 1,765 feet.

DeSoto Parish

Benedum & Trees Oil Co. set 251 feet of 12½-inch for surface string on No. 1 State, Section 22-14-12, and is drilling at 1,020 feet. Luke Case, trustee, has location for No. 1 Boatright, 400 feet south and 900 feet west NE cor., Section 3-10-13. R. O. Roy's No. 1 Whitaker in Section 5-13-13, is fishing for one joint of drill stem twisted off in drilling hard lime at 2,807 feet.

East Carroll Parish

Palmer Corp.'s No. 1 Carroll, Section 27-20-11, is drilling sand rock at 2,864 feet and No. 1 Hamley in Section 27-20-11, is shut down at 2,923 feet.

Franklin Parish

Davis and others' No. 1 Moore, Section 12-11-6, is drilling at 930 feet.

Madison Parish

Ruston Drilling Co.'s No. 1 Sondheimer, Section 24-18-11, is in shale at 3,060 feet.

Monroe District

Ouachita Parish—Ouachita Natural Gas Co.'s No. 2-B D'Arbonne, Section 25-19-2e, is on a rock at 2,399 feet.

Union Parish—Carter & Wingfield are bailing No. 2-A Clark, Section 7-23-1e, to test 10 feet of sand, total depth 2,295 feet; No. 3-A, same lease and section, is a location, last week's report of drilling at 800 feet being in error; No. 2 Security Trust, Section 7-23-1e, has rig up and No. 3 Security Trust in Section 23-23-1e, is drilling at 2,300 feet. H. C. McDonald has set 10-inch surface pipe at 60 feet on No. 1 United States, 175 feet south and 660 feet west NE cor. NE SE, Section 18-23-1e.

Richland Parish

Richland Operating Co.'s No. 1 Traylor, Section 24-16-6, set 190 feet of 12-inch surface casing and 8-inch at 941 feet.

Sabine Parish

W. G. Doerne is drilling No. 1 Pickering, Section 17-4-11, at 4,320 feet.

Thomas Parish

Enochs and others' No. 1 Curry, Section 39-11-12, tested salt water at 3,569 feet.

ARKANSAS

Ashley County

Atlantic Oil Producing Co. is reaming to bottom on No. 1 Moffatt, Section 28-16-8, preparatory to testing 10 feet of sandy shale, total depth 3,592 feet.

Calhoun County

Amerada Petroleum Co. is reaming to bottom on No. 1 Matlock, Section 10-12-13, total depth 3,400 feet.

Chicot County

Sam Hunter tested dry at 2,972 feet and at 2,991 feet on No. 1 Sawyer, Section 19-18-2w, and is drilling sand rock at 3,076 feet.

Ouachita County

McDonald Brothers' No. 1 Wilson, Section 25-15-18, is shut down for repairs to rig, total depth 3,000 feet.

Clark County

McKenzie Oil Co.'s No. 1 Eakin in Section 9-11-19, shut down for the last two months, is reaming to bottom, total depth 1,700 feet.

Johnson County

Arkansas Natural Gas Corp.'s No. 1 Houston, Section 15-10-24, tested 1,000,000 feet of gas in a sand at 2,225 feet.

Logan County

Arkansas Natural Gas Corp. is trying to sidetrack 8¼-inch casing on No. 1 Parks, Section 26-8-24, total depth 3,203 feet.

Union County

El Dorado—J. P. Hawkins has derrick up 200 feet south and east NW cor. NW SW, Section 6-17-15, for No. 1 Goodwin. McDonald Brothers' No. 1 Mayfield in Section 29-19-15, shut down at 230 feet since August with 12-inch set at 200 feet, is drilling again, total depth 1,135 feet. Starke and others have rig up for No. 1 Powell, Section 35-18-15.

Lisbon—Imperial Oil & Gas Products Co.'s No. 1 Goodwin, Section 26-17-16, tested salt water at 2,586-91 feet and is coring.

Lawson—Morefield & Tate are drilling at 2,420 feet on No. 1 Smith, Section 6-18-13.

Miscellaneous—E. L. Foster has derrick up for No. 1 Murphy Land Co., 200 feet north and west SE cor. SE NE, Section 22-17-17. Garrett-Modisette Drilling Co.'s No. 1 Murphy Land Co., in Section 30-17-17, is drilling at 2,820 feet.

EAST TEXAS

Bowie County

Hooks Oil & Gas Co.'s No. 1 Rosenberg in the L. T. Keen Survey, is shut down for orders at 3,086 feet.

Camp County

Rogers and others' No. 1 Enfelt in the R. M. Montgomery Survey, 3 miles northeast of Pittsburg, is shut down for orders at 1,978 feet after drill stem tests of 9 feet of sand at 1,778 feet and 1 foot at 1,978 were dry.

Harrison County

McRitchie and others' No. 1 Baldwin in the E. M. Fuller Survey, is drilling at 2,050 feet.

Panola County

Beckman & Freeman tested salt water at 1,051 feet on No. 4 Burns and are shut down for orders. Magnolia Petroleum Co.'s No. 2 Lula Fletcher in the B. C. Jordan Survey, tested 500,000 feet of gas at 1,041 feet at around 2,450 feet and is drilling lime at 2,465 feet; No. 2 Steel in the same survey is drilling hard lime at 3,187 feet. Natural Gas Products is drilling No. 2 Moore in the B. C. Jordan Survey at 2,000 feet. The Texas Company cemented 6-inch at 978 feet on No. 6-A T. C. Adams in the B. C. Jordan Survey. D. Thomason is trying to get surface fittings on No. 11 Crenshaw, in the B. C. Jordan Survey, which blew in from 2,460 feet and is running wild.

Red River County

D. M. Buffington's No. 1 Hassier in the Ed Hughes Survey near White Rock, is shut down at 1,000 feet. Bert Logenhein's No. 1 Atkinson in the Lawson Moore Survey, is shut down for orders at 1,065 feet. Johnson Petroleum Co.'s No. 2 Randolph in the Ed Dean Survey, is shut down at 1,400 feet after a show of gas with much fresh water at 1,330 feet.

Shelby County

Chapparall Oil Co. is fishing for tools on No. 2 Holt, in the Mathew Moore Survey, total depth 1,650 feet. Gulf Refining Co. is setting 6-inch to test a show of oil and gas in a sandy lime at 3,243-4 feet.

GULF COAST FIELDS

(Continued from Page 55)

flank is drilling at 162 feet. Sun Oil Co.'s No. 5 E. C. Farmer is drilling sand at 3,006 feet. On the southwest side, The Texas Company's No. 12-A Taylor is in sandy shale at a total depth of 3,506 feet and reaming to set casing. No. 2-B Taylor is drilling gumbo and lime at 2,409 feet. Sinclair Oil & Gas Co.'s No. 4 Taylor and Atlantic has been deepened 2 feet to 2,945 feet and screen is being set for retesting.

Blue Ridge—Fort Bend County

Moody Corp.'s No. 3 West Schenck on the south flank of Blue Ridge has picked up an oil showing sand at 3,575-3,602 feet and has set 6⅝-inch casing at 3,570 feet for a test. J. S. Abercrombie's No. 4 West Schenck in the same district is sidetracking at 2,296 feet. Sinclair Oil & Gas Co.'s No. 3 Davidson fee, completed last May for 1,000 bbls. pipe line oil from sand at 3,546 feet, is being rigged up to workover. Watts Oil Co. has made location for another test, No. 3 Scott, on the northwest flank and has rigged up for No. 9 Blakely.

Big Creek—Fort Bend County

Navarro Oil Co. continues to work on its No. 2 Hausler in an effort to make a producer at 3,502 feet. No. 2 Davis is standing as a derrick. Gulf Production Co.'s No. 49 Davis has an oil sand at a total depth of 3,775 feet and has set 6⅝-inch casing for a test. Its No. 27 Davis, an old well being worked over, is drilling at 2,760 feet.

Nash Dome—Fort Bend and Brazoria

Humble Oil & Refining Co. and Rycade Oil Corp.'s joint No. 1 Wisdom is coring sand at 2,928 feet. Rycade Oil Corp.'s No. 23 Wisdom, an old well being worked over, is trying to sidetrack at 3,822 feet.

Hardin County Domes

At Batson, East Batson Oil Co.'s No. 12 Donoghue tested dry at 1,109 feet but is to be deepened. Deutser Oil Co.'s No. 17 trustee has set casing to test shallow sand at 958 feet. Gulf Production Co.'s No. 20 Knight fee is drilling at 791 feet and Paraffine Oil Co.'s No. 79 Paraffine at 539 feet. The latter's No. 78 Paraffine was a failure at 980 feet and was shut down. Ada Belle Oil Co. is drilling another shallow hole, No. 124 Honeymoon, it being down 546 feet.

Rio Bravo Oil Co.'s No. 28 Teel, a deep test on the east side of the dome, is drilling gumbo at 1,430 feet. E. W. Skinner's No. 1 Sessler has been shut down at 2,159 feet. Paggi Brothers' No. 47 Queen City is down 1,258 feet.

At present there is no activity at Sour Lake.

Pierce Junction—Harris County

Rio Bravo Oil Co.'s No. 9 fee on the west flank is drilling sandy shale at 4,936 feet. Its No. 10-B Settegast is drilling sandy lime at 1,484 feet and its No. 11-A Settegast is in broken rock at 2,524 feet. Shaw and associates' No. 2-E (formerly 1-D) Fitzsimmons, north side, has started drilling and is in gumbo at 1,300 feet. Moody Corp.'s No. 2 Boyles has a derrick up, and its No. 3-B Whitehead is in gumbo at 1,671 feet. This company also has a derrick up for No. 4-B Settegast, a wildcat on the south side of the dome. No. 1-A Whitehead, an old well on the north side, is drilling deeper in gumbo at 5,243 feet. H. R. Cullen and associates' No. 5 Howe on the east flank has set strainer for a test of sand at 5,787 feet. Gulf Production Co.'s No. 26 Taylor is drilling at 4,125 feet in hard sand.

Goose Creek—Harris County

Humble Oil & Refining Co.'s No. 74 Simms Smith, deep wildcat northeast of the field, is drilling shale and lime at 4,682 feet. Gulf Production Co.'s No. 12 Stateland Producers is drilling at 2,010 feet. No. 17-A Tabb is drilling at 2,067 feet. Jim McMurry's No. 3 Grace Addey is down 2,483 feet.

Spindletop—Jefferson County

Gulf Production Co.'s No. 17 Marrs McLean was swabbed dry at 5,050 feet and is pulling liner to deepen. L. A. Painter has abandoned his No. 2 Rush as dry at 3,404 feet. No. 3 is drilling at 3,524 feet and No. 1 Gordon is down 1,905 feet. A rig is up for No. 2 Gordon and a derrick for No. 4 Rush. Unity Petroleum's No. 98 McFaddin in a shallow sand at 944 feet probably will make a small pumper and now is being rigged up to put on the beam.

Yount Lee Oil Co.'s No. 16 Gladys City is drilling sand and lime at 4,842 feet. No. 40 Gladys City is in sand and line at 4,434 feet, and No. 70 Gladys City is drilling sand and shale at 4,528 feet in sidetracked hole, having gone to 5,050 feet in heaving shale. No. 71 Gladys City is in shale and lime at 4,140 feet.

On the McFaddin lease, Yount Lee Oil Co.'s No. 20 McFaddin tested salt water at 2,874 feet and is milling out to deepen. No. 31 is swabbing at 5,116 feet. No. 82 has an oil showing sand

at 3,885 feet and is waiting casing cement to set. No. 83 McFaddin is drilling sand and shale at 4,576 feet. No. 84 McFaddin is drilling rock at 2,783 feet. No. 6 fee is drilling sand and lime at 4,128 feet, and No. 12 is in sand and lime at 3,788 feet.

Hull—Liberty County

Empire Gas & Fuel Co.'s No. 17 Barngrover was put on the pump during the week but soon sanded up and now is being worked on. Gulf Production Co.'s No. 23 Phoenix is rigged up to deepen. No. 53 Phoenix is perforating casing to test sand around 3,420 feet. Humble Oil & Refining Co.'s No. 18 Guedry has set strainer after working over to test sand at 3,000 feet. Republic Production Co.'s No. 6 Dolbear is drilling at 2,864 feet and No. 85 Dolbear is sidetracking at 1,121 feet after drilling to a total depth of 2,879 feet. The Texas Company's No. 5 Hannah fee tested salt water at 3,515-18 feet and is cleaning hole to deepen.

Liberty—Liberty County

Interest at Liberty now is centered at that area around Sun Oil Co.'s No. 10 Mitchell, which is holding up around 1,550 bbls. daily after coming in the early part of the week from a shallow sand at 875 feet on the dome. Gulf Production Co. has made location for No. 1 Chambers, offsetting it to the west and The Texas Company's No. 13 Staiti offsetting it to the south. Sun Oil Co. also has made location for No. 11 Mitchell. Vacuum Oil Co. has a location for No. 1 Trinity River. Yount Lee Oil Co.'s No. 11 Mitchell is waiting casing cement to set to test sand at 3,285 feet. A location has been made for No. 12. The latter two, however, are on the tract to the east of the Sun Oil Co.'s Mitchell tract where drilling has been under way off the dome for the past six months. Sun Oil Co.'s No. 9 Mitchell, also to the east of the new well, is drilling at 3,227 feet.

On the South Dayton side of the dome, Humble Oil & Refining Co.'s No. 9 Welder is drilling gumbo and lime at 2,982 feet.

Orange—Orange County

Brownie-Babbette Oil Co.'s No. 2 McLean tested salt water at 3,610 feet and is preparing to deepen. Humble Oil & Refining Co. also is rigging up to deepen its No. 12 Winfree, an old well. Sun Oil Co.'s No. 6 Brown is drilling deeper at 5,256 feet. The latter's No. 4 Gunstream is to be deepened.

High Island—Galveston County

Gulf Production Co. has made location for No. 8 Smith and is moving the rig from No. 7 Smith completed two weeks ago as a small producer. Marrs McLean's No. 11 Cade is drilling at 3,391 feet. No. 12 Cade is being rigged up to deepen.

Humble—Harris County

The Texas Company's No. 33 Koehler is drilling sand and shale at 3,174 feet. No. 24 Koehler is down 2,972 feet but drilling is delayed because of a fishing job. South Texas Petroleum Co.'s No. 2 Morris, south edge, has set strainer to test sand at 4,350 feet.

Raccoon Bend—Austin County

Humble Oil & Refining Co. is preparing to make a deep test of its No. 1-B Bracey by reaming the 12¼-inch hole to 18½-inch from 1,090-1,140 feet. Total depth is 1,225 feet in shale and lime. No. 1 Beal is drilling sandy shale at 1,182 feet. No. 1-B Grawunder is in shale and lime at 2,207 feet and No. 1-C A. Grawunder in shale at 350 feet. No. 2 Urban is drilling shale and lime at 1,890 feet. Two new tests, No. 2 Walton and No. 1 Hardy, have been spudded in.

DeWalt—Fort Bend County

Humble Oil & Refining Co.'s No. 1 Dew Brothers is drilling gumbo and lime at 1,483 feet. No. 1 Nelson is fishing with hole down 1,200 feet. No. 4 Sugarland is a derrick.

South Louisiana

Jennings—Acadia Parish

E. F. Simms' No. 1 Ernest Cockrell on the west flank has drilled out plug and will test sandy shale showing oil below 4,330 feet. This operator's No. 1 Clemont is fishing. No. 2 Clemont is shut down at 3,305 feet. No. 1 Grace Von Schuler is drilling at 3,410 feet in shale and lime. Gulf Refining Co.'s No. 2 Leckelt is drilling at 4,332 feet. Cranfill & Reynold's No. 1 Donnelly is down 2,277 feet. Yount Lee Oil Co.'s No. 5 Housierre-Latrielle on the east flank is drilling sandy shale at 4,595 feet and its No. 3 Crowley sand and shale at 2,806 feet.

Edgerly—Calcasieu Parish

Drysdale & Savoy have a rig up and are starting drilling in No. 3 Hill. Rex Petroleum Co.'s No. 1 Narroni is drilling at 3,624 feet and its No. 4 Hunter at 3,078 feet.

Lockport—Calcasieu Parish

Vacuum Oil Co. and Gulf Refining Co. still are trying to pull screen in No. 3 Miller to deepen the hole from 4,454 feet where it tested salt water. No. 21 Miller is drilling shale at 3,842 feet and No. 4-A Farquahar is in sandy shale at 4,236 feet. No. 6 Lock-Moore is drilling in water sand at 5,947 feet. No. 1 Henshaw-LeMoin, completed only during October flowing 50 bbls. daily at 3,045 feet, is being drilled deeper in water sand at 3,097 feet. No. 2-A fee, completed for 100 bbls. during August at 3,648 feet is pulling screen to deepen.

Vinton—Calcasieu Parish

Several completions during the week have left very few rigs running at Vinton. Gulf Refining Co.'s No. 47 Star-Vincent is drilling at 2,110 feet. The Texas Company's No. 19 Gray is standing at 1,868 feet. Vinton Petroleum Co.'s No. 2 Gordon is drilling at 2,983 feet.

Hackberry—Cameron Parish

Calcasieu Oil Co. has started two more tests at East Hackberry. Its No. 4 Valery has spudded in and is drilling gumbo at 488 feet. A rig is up for No. 12 Watkins. Louisiana Land & Exploration Co.'s No. 3-B Calcasieu Lake is drilling sandy shale and lime at 3,752 feet. Yount Lee Oil Co.'s No. 22 State has been rigged up and its No. 8 School Land is drilling sand at 3,086 feet.

Miscellaneous Fields

At Markham, Rycade Oil Corp. and Humble Oil & Refining Co.'s No. 3 Hudson is pulling casing to abandon. It is at a total depth of 4,166 feet. Sinclair Oil & Gas Co. is rigging up for No. 5 Norton, Damon Mound, Brazoria County. Fort Bend Oil Co.'s No. 1 Moore at Orchard, Fort Bend County, is drilling shale and lime at 1,475 feet. Gulf Production Co.'s No. 17 Moore is drilling gumbo at 3,710 feet. Gulf's No. 11 Moore, an old well being deepened, is in sticky shale at 3,900 feet.

At Sorrento, Ascension Parish, Louisiana, Gulf Refining Co. has abandoned its No. 10 United Land Co., testing salt water in cap rock at 1,679 feet. No. 11 is a derrick. Gulf Refining Co.'s No. 11 Lutcher-Moore, Starks Dome, Calcasieu Parish, is drilling at 3,914 feet and No. 12 at 3,453 feet. No. 12 Industrial, which tested salt water at 3,450 feet, is to be deepened. Yount Lee Oil Co.'s No. 3 Louisiana Petroleum Co., Anse La Butte, St. Martin Parish, is drilling sand and shale at 1,921 feet.

At Bayou Bouillon, St. Martin Parish, Rycade Oil Corp.'s No. 3 Atchafalaya fee is at a total depth of 3,577 feet and reaming to set casing. No. 4 Atchafalaya fee is drilling at 3,109 feet. No. 4 Bouillon fee is drilling at 1,763 feet and No. 5 Bouillon fee is down 945 feet where surface casing has been set.

Gulf Refining Co.'s No. 6-Z State, Loreauville, has been abandoned in a cavity at 1,374 feet. No. 2 Kling, same field, is drilling at 1,715 feet.

Miscellaneous Wildcats

Austin County—Gulf Production Co.'s No. 1 Jackson, San Felipe (Brookshire), is drilling gummy shale at 3,188 feet.

Brazoria County—At Stratton Ridge, Empire Gas & Fuel Co. has made location for No. 1 Brock in the G. E. Grosse Survey and has a derrick up. Bartell and associates' No. 8 Tolar Dannebaum, same dome, is rigged up to deepen. Meyers and associates' No. 1 Davidson, Clemens Dome, has been spudded in. Roxana Petroleum Corp. has abandoned as a dry hole its No. 2-A Pool at Allen Dome. It was at a total depth of 5,958 feet. This company's No. 3 Reece is drilling hard sandy lime at 1,213 feet and No. 5 Allen is in blue rock at 3,206 feet. Moody Corp. has abandoned as dry its No. 1 Jamison, 3 miles west of Angleton. It was in sandy shale at 4,742 feet.

Chambers County—Pure Oil Co.'s No. 1 Lost Lake, Lost Lake Dome, has been shut down for orders in hard lime at 3,636 feet. No. 2 Lost River, same dome, is drilling gumbo and lime at 2,356 feet.

Colorado County—The Texas Company has a rig up for its first wildcat in the Eagle Lake district, this being No. 1 Hoyo. DeFoor and associates have made location for No. 1 Dromgoole, G.H.&H. Survey No. 13. Rich Oil Corp.'s No. 1 Brune, 3 miles northeast of Columbus, is drilling limey gumbo at 910 feet. Alexander & Smith's No. 1 Kinkler, C. Amsler Survey, near Cat Springs, has drilled to 2,415 feet where it has been shut down.

Fort Bend County—Gulf Production Co.'s No. 12 Wolf, Long Point Dome, created a little sensation when it blew in making a little gas with a showing of oil from cap rock at a total depth of 601 feet. No. 9 Trone is drilling sticky shale at 4,086 feet. West and associates' No. 1 Hartfield, the first test at the new Needville Dome prospect, is drilling gumbo at 1,831 feet.

Galveston County—Republic Production Co.'s No. 1 Lobit, Dickinson, is drilling gumbo at 1,985 feet.

Harris County—Cedar Bayou Oil Co.'s No. 1 Johnson, 8 miles north of Goose Creek, is drilling shale at 3,968 feet. Humble Oil & Refining Co.'s No. 1 Minnetex at Mykawa, south of Houston, is drilling shale at 3,927 feet. Others in the county are shut down.

Jackson County—The Texas Company's No. 1 Moore, D.&G.N. Survey, 16½ miles north of the Edna Field, is drilling water sand at 2,680 feet. Wright Brothers' No. 1 Lawrence, John McHenry Survey, 12 miles northwest of Edna, has been shut down at 3,019 feet in shale and shell. These operators' No. 7-A Drushel at Edna, has picked up the gas sand encountered in their No. 6 and are preparing to test. Bottom of the hole is at 3,200 feet. No. 2 Classen is drilling sticky shale at 3,200 feet.

Jefferson County—Gulf Production Co.'s No. 2 Burrell, Fannette Dome, is drilling below 3,600 feet. The Texas Company has a rig up for No. 1 Pipkin at Big Hill Dome. This is the first operation at this dome in more than a year. Westbury Syndicate is getting ready to drill another test a mile north of Spindletop, the location being in the T. D. Yoakum Survey. Oswald Dome Syndicate's No. 3 Oswald, 2 miles south of Cheek, and Deep Test Oil Co.'s No. 1 McFaddin, 4 miles northeast of Spindletop, are the only other active rigs in the county outside of Spindletop.

Liberty County—Sun Oil Co. has abandoned its No. 1 Kyle, Moss Bluff Dome, after drilling to 2,980 feet in sand. Humble Oil & Refining Co.'s No. 3 Sterking, same dome, is drilling sticky shale at 2,580 feet. The Texas Company's No. 1 Davis, Davis Hill, is drilling sand at 3,588 feet.

Washington County—Sun Oil Co.'s No. 2 Grote, Somerville, is drilling sand annd shale showing oil at 1,040 feet. This company's No. 1 Marcus, Somerville, is drilling shale at 114 feet and No. 1 Einman is rigging up.

SOUTH LOUISIANA

Acadia Parish—Gulf Refining Co.'s No. 1 Housierre-Latrielle, Egan Dome prospect, is drilling below 5,090 feet without showing dome indications.

Cameron Parish—Roxana Petroleum Corp. has abandoned its No. 4 Watkins at Black Bayou as dry at 2,494 feet. No. 3 Watkins also has been shut down in cap rock at 1,394 feet and probably will be abandoned. No. 5 Watkins is being rigged up.

Iberia Parish—Louisiana Land & Exploration Co.'s No. 2 Avery Island, is drilling hard sand at 5,180 feet. This company's No. 3-A at Vermillion Bay is drilling gumbo at 296 feet.

Iberville Parish—Roxana Petroleum Corp.'s No. 2 Wilbert, White Castle, has been abandoned at 4,218 feet after failing to make a well in the cap rock tested. Standard Oil Co.'s No. 1 Wilbert, Bayou Blue Dome, is drilling sand below 3,800 feet. This company's No. 1 Schwing is rigged up. Union Sulphur Co.'s No. 3 Schwing, Bayou Des Glaise, is drilling gumbo at 671 feet.

SOUTHWEST WILDCATS

(Continued from Page 55)

edge of the Bruni extension cut it off from being an extension of that field and make it a wildcat proposition. Killam has been proverbially lucky in the Laredo territory. He not only brought in the discovery well of the area, but has discovered several of the additional pools.

South of Alworth

R. V. Hill, who has drilled several shallow holes in the area south of the Alworth Pool in Jim Hogg County and on the Zapata-Jim Hogg County line topped a sand at 719 feet in his No. 3 Ramirez in Survey 627 that looked like an oil well. Mechanical difficulties developed and the hole has not been completed, but it looks so much like an oil well there is more than an even chance that he will develop a pool there. Tests previously drilled helped him to work out the structure. It may be necessary to drill another well offsetting No. 3.

Duval County

National Oil Co.'s No. 2 Ball, 300 feet to north and west lines of Block 5 of subdivision of Ball ranch, has steel derrick up.

Starr County

The Texas Company's No. 1 H. A. Russell, Porcion 69, Block 173-A, 150 feet to south and east lines, has set 10-inch casing at 400 feet.

Webb County

William R. Jewell's No. 1 J. M. Gutierrez, Survey 857, Block 8, located 150 feet to south and west lines, is standing at 80 feet. Louis Hauseman and others' No. 1 Callaghan, Survey 440, located 166 feet to south line and 1,482 feet to east line and at 820 feet is testing. Baku Oil Co.'s No. 1 A. M. Bruni, Survey 735, Block 7, located 450 feet to north line and 150 feet to east line, is drilling at 540 feet. O. W. Killam's No. 5 Billings, Survey 712, is drilling at 900 feet. Suladie and others' No. 1 Neal, Survey 1,008, located 2,490 feet to south line and 150 feet to east line, is location.

Zapata County

National Oil Co.'s No. 1 Don B. Adams, Share 8, center of N half of Section 11, Block 4, of subdivision of Adams tract, is moving in machinery. R. V. Hill's No. 3 Ramirez, Survey 627, 400 feet to northwest lines and 535 feet to northeast lines, has sand at 719-26 feet and set casing at 713 feet to test.

Bastrop County

Gypsy Producing Co.'s No. 1 Lottman estate, east of Bastrop, is shut down at 2,146 feet. A. A. Loomis is making location in the John W. Bunton Survey. Cranfill & Reynolds' No. 1 A. Yost, A. Garcia Survey (formerly reported in Caldwell County), 710 varas to northwest lines and 580 varas to northeast lines, is drilling at 1,200 feet. Col. Billy Mayfield's No. 1 McColl, Stephen F. Austin Survey, 450 feet south of river and 750 feet to east line of farm, is deepening from 592 feet. John Storey's No. 1 Ed Pendergrass, J. B. Blalock Survey, center of tract, is moving in machinery.

Bexar County

Humble Oil & Refining Co.'s No. 1 D. & A. Oppenheimer, 450 feet east of Pleasanton Road, 750 feet to south line of tract, is drilling at 1,050 feet in shale. Marland Oil-Sun Oil Co.'s No. 1 J. B. Stewart, Manuel Monjarias Survey, 200 feet northeast and southeast of E cor. of E. B. Simmons farm, is drilling at 2,439 feet.

Blanco County

C. W. Bates' No. 1 Herman Massey, Henry Manton Survey, 920 feet to north line and 660 feet to east line, is shut down at 214 feet. Robert A. Rodson's No. 1 Glasscock, Survey 50, 150 feet to CEL, is drilling at 881 feet.

Bee County

Hurador Oil Co.'s No. 1 G. A. Ray, Pierce Miller Survey, northeast of Pettus, at 3,250 feet is running tubing and is reported showing a little oil. D. Hewitt's No. 1 Vogus, R. B. Narcy Survey, 200

Donovan A.S.M.E. Code Oil Country Boiler

The Logical First Choice When Results Are Required

Every DONOVAN boiler is equipped with handholes of ample number and size and in convenient locations.

Four 3½"x4½" A.P.I. handholes permit proper cleaning of the bottom of the boiler. The space around the mud ring can easily be cleaned out thru two handholes in the bottom of the front head and two more in the bottom of the throat.

To permit easy inspection of the crown sheet, five 3½" x4½" handholes, two on each side of the wagon top and one in the front head are provided.

In the smokebox end, under the tubes, a 3½"x4½" A.P.I. handhole is provided. This feature is readily appreciated by the man who takes care of boilers.

These are a few small details which go to make a good boiler. Nothing is too small for serious consideration.

DONOVAN has been building good boilers for many years and offers the oil industry a product without superior.

The next time you need boilers, take a look at DONOVANS. They are even better than they look. That name never goes on anything but the best.

Manufactured by

DONOVAN BOILER WORKS, INC.

PARKERSBURG, W. VA.

NEW YORK OFFICE—30 Church Street
FRICK-REID SUPPLY CORPORATION
Mid-Continent and Eastern Distributors
GREAT NORTHERN TOOL & SUPPLY CO.
MIDLAND IRON WORKS
Montana Distributors

All Leading Supply Houses Throughout the Eastern Fields Handle

DONOVAN QUALITY PRODUCTS

NONE BETTER

varas to south line and 976 varas to west line, is shut down at 500 feet; No. 1 Schultz, Sarah Burnett Survey, 300 varas to north line and 75 varas to east line, is shut down at 1,505 feet.

Caldwell County

Fred Adams' No. 1 Burney, Gideon Pace Survey, northeast of Lytton Springs is moving in machinery. Bartlett Brothers' No. 1 C. N. Martindale, William G. Steffey Survey, 490 feet to northeast lines and 972 feet to northwest lines, is drilling at 1,325 feet. John V. Edwards' No. 1 W. C. Caldwell, Cornelius Crenshaw Survey, 300 feet to east line and 600 feet to south line, is moving in machinery. Lonnie Glasscock, Pablo Martinez Survey, 600 feet northwest of discovery well in Lytton Springs Townsite, is drilling. Russell-Hill's No. 1 Hill, McCullough Survey, is drilling at 175 feet. The Texas Company's No. 1 D. T. Lackey, George W. James Survey, 880 feet to southeast lines and 450 feet to southwest lines, is drilling at around 1,500 feet. Jarmon & Owens' No. 1 Tabernacle, Pablo Martinez Survey, 900 feet southeast of discovery well in Lytton Springs Townsite, is drilling at 1,050 feet.

Comal County

George Kruger's No. 1 Uecker, A. Gayteau Survey No. 198, located in SE cor. is drilling at 100 feet.

Colorado County

National Oil Co.'s No. 1 H. T. Brandt, Freeman Pettus League, is location 150 feet to south line of tract and 1,000 feet west of highway.

Dimmitt County

G. W. Morgan's No. 3 City National Bank, Section 25, is location 600 feet east of No. 1.

Edwards County

McMann Oil & Gas Co.'s No. B-1 Walter Schreiner, H.E.&W.T.R.R. Survey, Section 50, Block F, located 330 feet to south and east lines, is shut down at 2,130 feet. Segale Oil Co.'s No. 1 Neal Jergin, G.C.&S.F. Ry Survey No. 2, located 1,000 feet to north line and 740 feet to east line, is drilling at 1,330 feet in blue shale.

Frio County

Fred Charleboix's No. 1 Escenbury, Edwards Gallagher Survey No. 789, is location 500 varas to north line and 1,200 varas to west line. Pilgrim Oil Co.'s No. 2 Blackaller, James Gourley Survey, is waiting on rock bit at 3,218 feet.

Fayette County

Marshall & Moore Oil & Gas Co.'s No. 1 John A. Kerr, Muldoon League, is drilling at 1,800 feet. National Oil Co.'s No. 1 J. C. Melcher, S. M. Williams League No. 1, located 300 feet to north and east lines, is rigged up. R. E. Phalon's No. 1 Cervenka, Fayette County School Lands, Blocks 97 and 102, is drilling at 2,502 feet.

Goliad County

J. E. Alexander's No. 1 Campbell, 1 mile north of Goliad, is drilling at 825 feet.

Gonzales County

Joe Bruner's No. 1 R. D. and J. C. Miller, Richard Heath Survey, three-fourths mile north of Waelder, has derrick up and rig on the ground. Dunning & Peirce's No. 1 Keepers, R. Ward Survey, is standing at 203 feet. W. D. Flynn's No. 1 Wilhausen, S. Bateman Survey, is drilling at 4,800 feet. W. G. Malone's No. 1 Straton, J. M. Salinas Survey, 375 feet to southwest lines and 1,275 feet to northwest lines, is shut down at 400 feet. George Sullivan's No. 1 Norwood, Winslow Turner Survey No. 3, located 2,080 feet to northeast lines and 2,410 feet to northwest lines, has resumed drilling at 700 feet. The Texas Company's No. 2 Bateman, A. Zumwalt Survey, is drilling at 250 feet. L. P. Unkel's No. 1 Lumm & Bouldin, R. Ward Survey, Block 10, located 570 feet to CSL, is shut down at 380 feet.

Guadalupe County

Brodie and others' No. 1 B. B. Dix, Ira Nash Survey, 610 feet north of road and 320 feet to east line, has derrick up and rig moving in. J. J. Christie's No. 1 Taylor Thomas, Gustavus Chotwell Survey, 1,100 feet to southwest lines and 1,130 feet to southeast lines, is drilling at 923 feet. T. H. Poole's No. 1 C. Woehler, John King Survey, 310 feet to north line and 210 feet to east line, is rigged up and standing.

Hays County

Estess-Moore & King's No. 1 C. N. Sledge, Hunton & Jones Survey, 285 feet to northwest lines of farm, is standing at 804 feet.

Jackson County

J. B. Douglas' No. 1 C. O. Lowrance, John McHenry Survey, 720 varas to northwest lines and 3,700 varas to southwest lines, is drilling at 2,743 feet. The Texas Company's No. 1 W. C. Moore, I.&G.N. Survey No. 208, located 5,108 feet to south line and 150 feet to west line, is drilling at 2,385 feet. Wright Brothers' No. 2 Classen, 1,500 feet north 10 degrees west of No. 1 is drilling at 2,912 feet; No. 7 Drushel, T. Rodriguez Survey, 900 feet due east of No. 3, is drilling at 2,420 feet.

Jim Wells County

Cushing Oil & Gas Co.'s No. 2 M. Perez, La Tinaja de Lara Grant, 4,319 feet to west line and 455 feet to north line, is in gumbo at 2,200 feet and drilling.

Karnes County

Frank M. Swacker's No. 1 Butler, is spudded in and drilling.

Kinney County

Mardon Oil Co.'s No. 1 Jim Clamp, Section 1,492, Survey 346, at 1,973 feet bailed about 1½ bbls. oil per day, and plans are to shoot well and if it does not make a producer to deepen to the Edwards lime.

Maverick County

Rycade Oil Co.'s No. 3 Sullivan, Survey 71, Block 7, located 520 feet to west line and 2,137 feet to south line, is drilling at 3,750 feet; No. 2 Chittim, Survey 158, Block 7, located 350 feet to north and east lines, is drilling at 7,400 feet.

Medina County

California-Medina's No. 1 Rothe, Survey 1,012, is on bottom at 3,278 feet. Carl G. Cromwell's No. 1 Taylor, Section 135, Block 28, located 210 feet to north line and 155 feet east line, is shut down at 350 feet. Holt & Cromwell's No. 1 Mott, Survey 1,267, is location 2,250 feet to east line and 4,182 feet to south line; No. 1 Henry Batot, 4 miles southwest of Hondo, is shut down at 400 feet. Milton & Webster's No. 1 Crabtree, 1 mile west of Hondo, is drilling at 600 feet. North & South Development Co.'s No. 1 Charles Nehr, 8 miles south of D'Hanis, has derrick up and rig on the ground. W. R. Painter's No. 1 Muennink, H. Castro Survey No. 367 at 857 feet will shoot test. W. T. Richardson's No. 1 Tom Bendele, Survey 593, located 150 feet to south line and 1,000 feet to west line, has resumed drilling at 937 feet to go deeper.

Nueces County

Nueces River Basin Development Co.'s No. 1 F. C. Allen, G. Farrier Survey, 1,596 feet to south line and 474 feet to west line, at 2,714 feet has gas sand and shut down to wait for casing.

Refugio County

Dunlap & Wilkinson's No. 1 Rooke, 1 mile north of Aransas River and 700 feet west of railroad, is standing at 2,750 feet. J. M. Davis and Tom Horn's No. 1 Howard, Section 8, located 600 feet to north line and 2,604 feet to east line, has set and cemented surface casing at 417 feet and is standing.

San Patricio County

C. I. Albertson's No. 1 Boscamp, W. R. Hazen Survey, Block 10 located 200 feet to CNL, is shut down at 1,420 feet. R. D. Kelly's No. 1 C. C. Smith, southeast of Odem, spudded in and shut down. George B. Pickett's No. 1 Whitworth, NW NW Section 60, is shut down at 3,250 feet; No. 1 Garret is standing at 3,030 feet. F. P. Zoch's No. 1 Andrews, Block 7, Welder & Odem Subdivision, 200 feet to north and west lines, is drilling at 2,287 feet.

Uvalde County

Pure Oil Co.'s No. 1 J. D. Smythe, Survey 687, located 740 feet north and 146 feet east of SE cor. Survey 20, is drilling in shale at 4,608 feet.

Victoria County

Houston Oil Co.'s No. 1 McFaddin, Survey 14, located 600 feet to northwest

lines and 1,600 feet to southwest lines, has set casing at 718 feet.

KANSAS FIELDS

(Continued from Page 48)

C SW, Section 29-18-2w, has been completed for 4,000,000 feet of gas in sand at 2,945-51 feet.

Russell County

R. E. Day and others' No. 3 Mermas, NW cor. SE NE, Section 32-13-15w, was completed for 360 bbls. in sand at 3,336-37 feet.

Rush County

Phillips Petroleum Co. made location for No. 1 Leglester, NE cor. NW SE, Section 10-16-18w.

OKLAHOMA FIELDS

(Continued from Page 80)

21-14-10, has been abandoned at 3,374 feet.

Grady County

Oklahoma Natural Gas Corp. has built the rig for No. 4 Edmundson, SE cor. NW, Section 23-5-8w. Magnolia Petroleum Co.'s No. 1 Harrison, NE cor. SE NE, Section 28-3-5w, is drilling deeper at 1,386 feet.

Hughes County

Bunte and others' rig is up for No. 1 Buchner, NE cor. NW, Section 12-8-8. The Texas Company is building the rig for No. 1 Street, NE cor. NW SW, Section 21-7-8.

Jefferson County

E. S. Bell's No. 1 Roark, NW cor. SE SE, Section 13-8s-7w, has been abandoned at 2,013 feet.

Kay County

T. B. Slick and Comar Oil Co.'s No. 1-E Endicott, SW cor. Section 35-25-1w, Tonkawa Pool, is cleaning out to deepen from 4,090 feet.

Lincoln County

Flynn & Morgan made location for No. 1 Finley, SW cor. Section 19-16-6.

Marshall County

Helman & Gill's No. 1 Storey, SW cor. NW, Section 3-5s-5, is drilling at 50 feet.

Noble County

Don Reed's No. 1 Mathieson, SE cor. SW SE SE, Section 23-24-2w, was completed for 15,000 feet of gas in sand at 560-70 feet.

Pawnee County

Magnolia Petroleum Co. is repairing the rig to deepen No. 1 School Land, NE cor. Section 36-23-4. The rig is on the ground for No. 2 Newell, SW cor. NW SW, Section 2-20-6. Thompson & Black moved a machine to the location for No. 2 Lennex, NW cor. SW SW, Section 14-20-9. T. Mann and others' No. 1 Richards, SW cor. NW, Section 23-20-9, has been completed for 2,000,000 feet of gas in Burgess sand at 2,109-33 feet.

Stephens County

Pandem Oil Co.'s No. 1 Green, SW cor. Section 35-2-9w, is rigging up. Harry Hanbury's No. 3 Taliferro, SW cor. SE NE SE, Section 28-1s-8w, is rigging up. Medlin and others' No. 4 Burke, SE cor. NW NW NE, Section 34-1s-8w, is rigging up. Pace and others made location for No. 9 Bristowe, NW cor. NE SE NW, Section 18-2s-7w. E. J. Stump has the rig up for No. 1 Simmons, SW cor. Section 26-3s-8w.

Elliott and others' No. 1 Indian, NW cor. SE, Section 11-1s-9w, has been abandoned at 2,706 feet. Fort Ring Oil Co. and L. Sykes' No. 5 Taliaferro, CNL SE SE, Section 28-1s-8w, is pumping 100 bbls. from sand at 2,467-71 feet. C. R. Miller's No. 1 Miller, SE cor. NE, Section 25-1s-4w, made a 20-bbl. well in sand at 2,632-3,275 feet. Petroleum Producers Corp.'s No. 8 Bond, SE cor. NW NW SW, Section 7-2s-7w, is swabbing 25 bbls. from sands at 1,530-32 and 1,532-46 feet. Pace and others' No. 6 Bristowe "A," SE cor. NE SE NW, Section 18-2s-7w, has been abandoned at 2,367 feet. No. 8 Bristowe "A," SW cor. NE NW, Section 18-2s7w, is pumping 25 bbls. from sands at 1,479-98 feet. The Prairie Oil & Gas Co.'s No. 7 Bond, NW cor. SE SW SW, Section 7-2s-7w, has been completed for 25 bbls. from sand at 1,503-23 feet.

Tulsa County

Mays Drilling Co. and others' No. 1 Fulsom, NW cor. SE NE, Section 24-19-11, is dry and abandoned at 2,230 feet. West Petroleum Co.'s No. 16 Edwards, CEL SW SW, Section 1-18-12, is dry and abandoned in Turkey Mountain sand at 2,070-2,104 feet.

Wagoner County

Elk Drilling Co. has a machine on the location for No. 6 Childers, NW cor. SE NW, Section 22-18-17. No. 1 Redmon, SW cor. SE SW, Section 36-17-17, is dry and abandoned at 976 feet.

Muskogee County

C. O. Buckles and others moved a machine to the location for No. 1-A Simmons, SW cor. SE NW, Section 9-15-15. J. L. Selby has a machine at the location for No. 7 Drew, SW cor. Section 31-15-15. Harry Smith's No. 2-A Franklin, CNL NW NW, Section 30-15-16, is spudding. C. D. Bradley's No. 1 Cordrey, NE cor. SE NE, Section 21-15-19, is drilling at 125 feet. E. B. George and others' No. 1-A Flowers, CEL NE SW, Section 5-13-16, is a machine. B. H. Mills' No. 1 Brown, NW cor. NE NW, Section 19-13-19, is drilling at 768 feet.

Bryan & Emery's No. 7 Barnett, SW cor. NE NE, Section 8-15-15, is a 70-bbl. well in sand at 1,586-89 feet. J. M. Foltz' No. 1 Grimmett, SE cor. NE, Section 9-15-17, was completed for 5,000,000 feet of gas in sand at 1,240-45 feet.

Okfuskee County

E. L. Robinson and others' No. 3 Severs, NE cor. NW SE, Section 35-11-9, made 14 bbls. from sand at 1,475-1,500 feet. Producers Oil Co.'s No. 3 Barnett, CEL SW SW, Section 19-11-11, made 50 bbls. from sand at 2,278-90 feet.

Ed Jillson and others' rig is up for No. 1 Barnett, SE cor. NE NE, Section 30-12-9. W. L. Umbrum moved a machine to the location for No. 6 Simmer, NE cor. SE, Section 11-10-11. Atlantic Oil Producing Co.'s No. 1 Robinson, SW cor. NW SW, Section 12-10-11, is spudding.

Okmulgee County

Tiger Mountain Oil Co.'s No. 2 Tucker, CNL NE SE, Section 2-13-14, is preparing to deepen from 1,206 feet. Denton & Marshall's No. 1 Osborn, NE cor. Section 17-15-14, is dry and abandoned at 2,410 feet. Baroda Oil Co. and others' No. 1 Adam, NE cor. Section 2-14-11, was deepened to Wilcox sand at 2,998 feet and plugged back to Dutcher sand at 2,298-2,307 feet for 1,000,000 feet of gas. Winemiller Oil Corp.'s No. 1 Boon, C NW SE, Section 20-14-12, is dry and abandoned in Wilcox sand at 2,739-71 feet. Tiger Mountain Oil Co.'s No. 2 Tucker, CNL NE SE, Section 2-13-14, was completed for 25 bbls. in sand at 1,720-35 feet. Penrod & Thompson's No. 11 Reynolds, NE cor. SW SE NW, Section 15-13-14, made 15 bbls. from sand at 2,459-65 feet.

Osage County

Stephenson, Henry & Rock's No. 1, SE cor. NW, Section 11-26-8, is a rig under construction. Bement Oil Co.'s No. 6, NE cor. SW SE, Section 10-25-8, is spudding. Winona Oil Co.'s No. 25, SE cor. NE SE, Section 28-24-10, is drilling at 760 feet. Clint Moore estate and Ohio Osage Oil Co. has a machine at the location for No. 16, NW cor. SW SW, Section 9-21-9. The machine is also on the ground for No. 17, SE cor. SW SW, Section 9-21-9. A machine has been moved to the location for No. 4, NE cor. NW NW NW, Section 16-21-9. Oklahoma Natural Gas Corp. has a machine on the location for No. 1,655, SW cor. Section 27-21-11. Pioneer Petroleum Co.'s No. 7, NW cor. NE SW, Section 5-20-11, is a machine. Devonian Oil Co. has the rig up for No. 2, NE cor. SE SE, Section 10-20-11.

Carriker & Colville's No. 1, SW cor. NE, Section 11-26-8, has been completed for 100 bbls. in sand at 2,143-68 feet. Amerada Petroleum Corp.'s No. 1, NE cor. SW, Section 25-25-6, is dry and abandoned at 2,925 feet in chat. A. G. Oliphant's No. 1, SW cor. Section 2-25-8, is dry and abandoned at 2,722 feet in Siliceous lime. Peters Petroleum Co.'s No. 5, NE cor. SW NW, Section 26-25-9, made 100 bbls. from Bartlesville sand at 2,104-83 feet. Oklahoma Power & Water Co.'s No. 112, NE cor. SE NW NW, Section 31-21-10, has been abandoned at 2,050 feet.

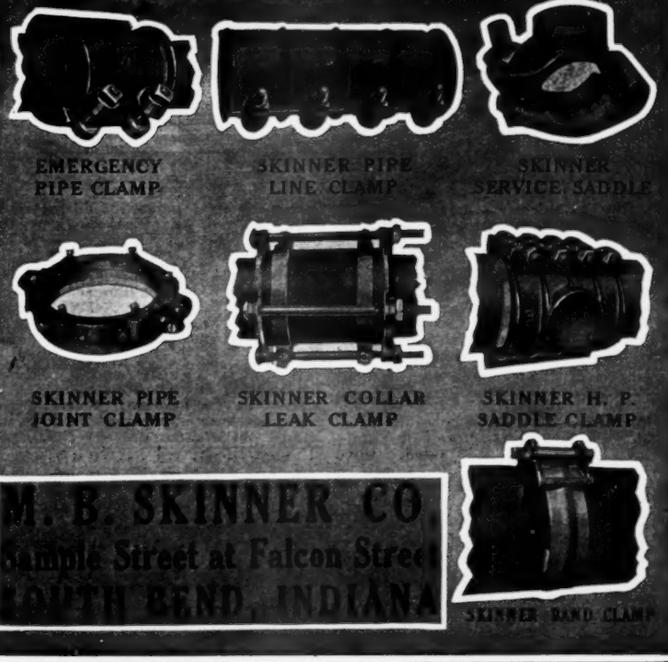
It's safe—with an

Emergency Pipe Clamp

—the quick, sturdy repair for splits and rust holes in oil and gas lines. Absolutely permanent under any conditions. The established clamp for field use.

Made of malleable iron, in all sizes—1″ to 12″. Carried in stock by practically every Supply Store.

Write for our new booklet!



M. B. SKINNER CO.
Sample Street at Falcon Street
SOUTH BEND, INDIANA

35 CENTS a line first insertion; 25c a line each additional insertion. Cash in advance.

CLASSIFIED WANTS

CREATE AND BUILD BUSINESS

MAIL your advertisement now. It will be published next week. Cash with order.

FOR SALE—EQUIPMENT

TANK CARS

50—80,000-gallon 80,000-lb. capacity. Class 2, all steel, with coils.

STORAGE TANKS

2—55,000-bbl., now dismantled. Ready for shipment from East St. Louis.

HYMAN-MICHAELS COMPANY

Peoples Gas Bldg., Chicago, Ill.
Railway Exchange, St. Louis, Mo.

55,000-BBL. brand new tank, $5,000.
7—500-gallon, 3-compartment truck tanks. Only sample of many bargains.
OIL ENGINES
All sizes and kinds—new and used.
What do you need?
Send for bulletin.
ZELNICKER IN ST. LOUIS
Specialists in Rails, Equipment, Tanks, Steel Sheet Piling for 30 Years

---

USED

ARC WELDERS

Ten slightly used arc welders of various makes for immediate delivery.

All in excellent condition.

Box C-640, The Oil and Gas Journal, Tulsa, Okla.

FOR SALE—1 No. 28 Star machine with calf wheels and 30 mast, 45 H. P. mounted boiler, plenty of tools, all in first class condition.
1—27 Star machine, mounted boiler, some tools, located in southeast Kansas. Address Box C-573, The Oil and Gas Journal. Tulsa. Okla.

USED LINE PIPE AND CASING
FOR SALE
450' 15½" 70-lb. used casing.
1,000' 12½" 50-lb. used casing.
2,200' 10 " 40-lb. used casing.
2,100' 8¼" 32-lb. used casing.
3,900' 6⅝" 24-lb. used casing.
Located in Oklahoma.
Above pipe was purchased new and used in one well.
KEYSTONE PIPE AND SUPPLY CO.
607 Holmes Bldg.
Fort Worth, Texas.

FOR SALE OR TRADE one Star Drilling Machine No. 23. In first class condition with a full string of drilling tools or will trade for a standard string of tools. The Star Machine has rubber tires and a mounted boiler and derrick.
Write G. H. Dempsey, Stop 22½ Lorain Road. N. Olmsted, Ohio.

FOR SALE—One 2,000 pound Niles, Bement & Pond Steam Hammer. Used one year.
One 70 HP commercial stationary boiler, including bricks and stack.
Larkin Packer Co.
St. Louis, Mo.

NOTICE
For sale, Wilson Refinery equipment, tanks, still, pumps, agitator, boiler and pipe and connections. Was running this year. In A-1 condition.
W. BOGART
Burkburnett, Texas Phone 136

FOR SALE — Two Northwest Model 105 Gasoline Crawler Cranes; both in fine condition, one nearly new; reasonable. Box C-641, The Oil and Gas Journal, Tulsa, Okla.

NO. 50 ARMSTRONG TRACTION MACHINE used only on second well, equipped with 8" and 6" tools. Price right for cash. F. M. Gray, Jr., Inc., 123 Wisconsin Ave., Milwaukee, Wis.

FOR SALE—EQUIPMENT

FOR SALE
1—40 H. P. Patten Bros. air compressor building and all equipment, located southeast Kans., address, Box C-601, The Oil and Gas Journal, Tulsa, Oklahoma.

2,500' 6" Drill pipe with tool joints.
4,000' 3" Drill pipe with tool joints.
All sizes pipe and casing bought and sold.
You must be satisfied.
IMPERIAL PIPE & THREADING CO.

Wichita Falls, Texas. Phone 9910.
Holliday, Texas. Phone 25.

FOR SALE—300 H.P. Miller Gas Engine, complete equipment. Address, Engine, Box 1150. Huntington, W. Va.

EQUIPMENT WANTED

WANT four miles of No. 1 line pipe, 2-inch; low price; close enough to inspect.
IRAAN ICE CO., IRAAN, TEX.

PATENT ATTORNEYS

REGISTERED PATENT ATTORNEYS
United States and Canada
Before disclosing your invention to anyone, send for blank form.
Evidence of Conception.
Bulletin "How to Establish Your Rights" and complete information free.
LANCASTER & ALLWINE
240 Ouray Bldg., Washington, D. C.

C. W. GERARD, Registered Patent Attorney; former Patent Office Examiner. 510 Lathrop Bldg., Kansas City, Mo.

PATENTS—Oil well cases a specialty. Reliable services by an experienced practitioner, devoting personal attention to each case. References to oil well clients in Tulsa. B. P. Fishburne, Patent Lawyer, 550 McGill Bldg., Washington, D. C.

OIL INDUSTRY PRINTING

CONSUMERS LEDGERS
We are prepared to furnish from stock standard forms of gas meter Consumers Ledgers. Sample forms and quotations on request. First-class material and workmanship.
DERRICK PUBLISHING CO.
Oil City, Pa.

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township books, well records, etc. Request on your letter head gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

OIL and GAS LEASE Form No. 101 protects all your interests—any quantity 5 cents each. For sale by U. S. Lease Form Co., Brink Haven, Ohio.

GEOLOGISTS

GEOPHYSICAL
Magnetometer surveys made, contour map prepared. Expenses and acreage.
GEOPHYSICAL EXPLORATION CO., Petroleum Bldg., Oklahoma City, Okla.

OIL LOCATED before drilling. Geophysical method. Magvibrometer Instrument; take pay in oil. No oil, no pay. Except traveling and testing expenses. 95 per cent accuracy. O. P. Coffin, Caddo, Texas.

AT LAST scientific method perfected for locating Oil. Positive action. Will make few free locations. Know of two big undeveloped structures spudder would handle. ADDRESS, Box 801, Cisco, Tex.

VERTICAL MAGNETOMETER SURVEYS
Made and interpreted by F. L. Rookstool, 724 Jenkins, Norman, Okla. Phone 1761.

MANUFACTURING MACHINISTS

MACHINE WORK—CASTINGS
Machined to your drawings. Gears, Machinery designed and built.
Modern Facilities—Prompt Service.
Reasonable prices. Send for our booklet.
GENERAL ENGINEERING AND MFG. CO., ST. LOUIS, Mo.

BUSINESS OPPORTUNITIES

OIL INVESTMENT

We offer an opportunity to investors, oil producers and oil companies to participate in the drilling of a well in practically proven field where the oil is of extremely high gravity and gasoline content running up to 70 per cent natural. This organization is capitalized at a small number of interests and a $100 put into it might yield to you wonderful returns. A good clean proposition that will stand up under rigid investigation. Every answer to this advertisement will receive prompt attention and maps and full particulars will be sent you at once. Address Box C-599, The Oil and Gas Journal, Tulsa, Okla.

CAPITAL SEEKERS—Put your project before 260 livewire brokers—cost trifling. Details free. Amster Leonard, East Orange, N. J.

ADVERTISING RATES

	1 Time	2 Times	3 Times	1 Mo.
3 lines	1.05	1.80	2.25	3.30
4 lines	1.40	2.40	3.40	4.40
5 lines	1.75	3.00	4.25	5.50
6 lines	2.10	3.60	5.10	6.60
7 lines	2.45	4.20	5.95	7.70
8 lines	2.80	4.80	6.80	8.80
9 lines	3.15	5.40	7.65	9.90
10 lines	3.50	6.00	8.50	11.00

(Six words usually make a line.)

Compute white space at the above rates.
Mail your advertisement to

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

IN SHALLOW DRILLING
I have one of the best propositions in the East. E. D. Watkins. Irvine. Ky.

WE BUY, or Refinance Gas, Oil or Pipe Line Companies with assets of One Million Dollars, or more. Address: P. J. Minck, Tulsa, Okla. Phone 4-0245.

WILL GIVE INTEREST in good proposition for drilling a shallow well. B. L. Anthony, 909 E. Pine. Enid, Okla.

CAPITAL—Want parties to help finance exceptionally good shallow drilling proposition. Box 322, Enid, Okla.

WE RETAIL 25 to 45 tanks gasoline monthly from our retail bulk stations. Want direct refinery contract for our requirements, with some appreciative small refinery running uniformly good gas. Confidential. Box C-642, The Oil and Gas Journal, Tulsa, Okla.

INCORPORATIONS

DELAWARE incorporator. Charters, fees small, forms. Charles G. Guyer, 901 Market St., Wilmington, Del.

CHARTERS—Delaware best, quickest, cheapest, most liberal. Free forms. Colonial Charter Co., Wilmington, Del.

POSITIONS WANTED

CORING EXPERT just returning from India where he has been employed as service operator for large core drill manufacturer, offers his services. Speaks Spanish and Portuguese. Willing to go anywhere. Tor O. Sjobom, 1611 Rose Street, Berkeley, Calif.

ENGINEER EXECUTIVE. Ten years field and office experience. Gas distribution and leakage specialist. Age 35. Best References. Box C-632, The Oil and Gas Journal, Tulsa, Okla.

HELP WANTED

DRAFTSMEN

WE REQUIRE SEVERAL THOROUGHLY EXPERIENCED DRAFTSMEN IN OUR OIL REFINERY DEPARTMENT, CAPABLE OF DESIGNING THE EQUIPMENT FOR PIPE STILL DISTILLATION UNITS, SUCH AS THE STILL, FRACTIONATING TOWERS, PUMP HOUSE, PIPING, ETC. OPPORTUNITY FOR ADVANCEMENT. GIVE COMPLETE DETAILS IN YOUR APPLICATION, AGE, PAST EXPERIENCE, SALARY AND WHEN AVAILABLE.

ARTHUR G. McKEE AND CO.
2422 EUCLID AVENUE
CLEVELAND, OHIO.

ENGINEER WANTED to run twelve hour shift, air compressor station, using Miller Machines. Write experience, giving references. W. D. Chew, Shreveport, La.

WANTED—Young man with at least High School education and experience in Refinery Purchasing Dept. Location Chicago. Box C-634, The Oil and Gas Journal. Tulsa. Okla.

ELECTRIC WELDERS experienced, for work West Texas Pipe Line. Pay $1 per hour or liberal piece work. Long time job. Smith Brothers, Inc., B. F. Schulz, Welding Superintendent. Apply W. R. Newell, or H. A. Frederick, Box 4. Iraan, Tex.; Chas. Schooler, Box 516, Junction, Tex.; and T. J. McCarthy, LaGrange, Tex.

DRILLER WANTED — Have 2,000 acres under lease, Wyandotte County, Kansas. Want reliable man to drill for an interest. E. F. Frerking, Puritan Hotel, Kansas City Mo.

CLASSIFIED advertisements in this section do pay well in money and in extended business relations. This has been proven by the continual advertising that we receive from the men in the oil industry, everywhere.

REAL ESTATE

HOUSTON, TEX., INDUSTRIAL SITE
540 Ft. frontage on thoroughfare, 546 frontage on G. H. & H. railroad, 400 ft. depth, ground level, power lines and city conveniences, street car, only one mile of ship channel. Ideal location for any large business or factory wanting trackage with an advertising value. Prices and terms to prospective buyers only.
John M. Haesly,
1729 Bennett Ave., Dallas, Texas.

CALIFORNIA FARM, HOMESITES overlooking Pacific North of Los Angeles. Crops earn $300 per acre. A. M. Ranney, owner, R. F. D. 501, Oxnard, Calif.

FOR SALE—MAPS

WEST TEXAS — SOUTHEASTERN NEW MEXICO WALL MAP covers producing fields in twenty-five counties, including Lea, Winkler, Pecos, Howard, etc. Shows sections, surveys, oil and gas wells, drilling wells, dry holes and depths. Size 72×54 inches, price on linen $22.50. Kelly Map Co., Box 1773, Tulsa, Okla.

RANCHES AND FARM LANDS

56,000 ACRE TRACT in winter vegetable district, Texas. Ripe for subdivision. Fine soil, water, fences. Good Oil indications. Cannot lose on this. Bargain. S. H. Christensen, 606-7 Kirby Bldg., Houston, Texas.

35 CENTS a line first insertion; 25c a line each additional insertion. Cash in advance.

CLASSIFIED WANTS

CREATE AND BUILD BUSINESS

MAIL your advertisement now. It will be published next week. Cash with order.

ROYALTIES—PRODUCTION

PERPETUAL DEEDED ROYALTIES
Winkler, Loving, Ward, Lea, Pecos Counties. J. R. Haynes, Grantville, Kans.

OIL ROYALTY BROKERS
Established 1922
We are in the market at all times handling Texas Producing Oil Royalties. All transactions handled on cash basis. Send us your Buying and Selling Orders.
AMERICAN NATIONAL BROKERAGE CO.,
E. T. Marion, Manager
1203 Dallas Athletic Club Bldg.
Dallas, Texas.

UNDEVELOPED OKLAHOMA ROYALTIES, favorable districts. Joe P. Crawford, Petroleum Bldg., Oklahoma City, Okla.

ROYALTY ON TRACTS of 40 acres and larger; ⅛th $1 per acre. Certificate of title given on each tract. Luther Calaban. Idabel, Oklahoma.

I WILL SELL ½ of ¼ royalty of 34-10-7 of 40 Acres Seminole Co. and ½ of ¼ royalty of 6-7-2 of 40 Acres Potawatomie County. John Hinton Hoppes. Washington C. H., Ohio.

ROYALTY SNAP

In southern Oklahoma, on major company structure, in line for big production; subsurface and geophysical. Under lease to drill within 40 days. Fractional royalty on 40 to 160 acres on $30 base; best part of structure; for further information write,

F. O. HARRELL

301 City Nat'l. Bldg., Wichita Falls, Tex.

LEASES—PRODUCTION

WRITE tor our list; oil leases, royalties and blocks; Pontotoc, Seminole and adjoining counties. Bowles & Smith, Ada, Okla.

FOR SALE — Leases, Oil Production, Asphalt, Limestone and Other Mineral Lands. W. P. Harley, Bowling Green, Ky.

WANTED AGENTS AND BROKERS
We are drilling on what looks like one of the best chances for oil and gas in Louisiana between Sorrento-Salt Dome on the east, and the Belle-Helene Salt Dome on the west, with production on both sides of us. Big development is going on on both sides by the Major Oil Company, and Independent Oil Corporation. This is one of the big oil chances in the southeast Louisiana, Asansion Parish. Write for maps and geological reports.
BURNSIDE OIL COMPANY, INC.
611 Maritime Bldg.,
New Orleans, La.

LOCATING AND DEFINING OIL AND GAS structures which will produce. Capital interested in wildcat territory, will lease and locate. D. H. Reavis, Columbia, Tenn.

OIL LEASE, ROYALTIES, RANCHES
South-West Texas. Winkler, Loving, Ward, Reeves, Culberson Counties.
H. F. ANTHONY & CO.
Pecos, Texas.

FOR SALE—A spread of leases close by Midwest Exploration Co. well which is now drilling in SW¼ of Section 11-16s-15w, Barton County, Kansas. Address Box 26, Galatia, Kans.

FOR SALE—Royalties in Sections 11 and 14, Townships 16s, Range 15w, Midwest Exploration Co. now drilling a well in SW¼ of Section 11-16-15. Address Box 26, Galatia, Kans.

40 ACRES; 20 year oil and gas lease. Section 35, Block D-6, Terrell County, Texas. $1.50 per acre. John Schoenborn, 5941 North Washtenaw Ave, Chicago, Ill.

LEASES—PRODUCTION

LEA COUNTY, NEW MEXICO
Perpetual Royalties.
W. S. Patterson,
Pecos, Texas.

LEASES AND ROYALTIES, Caddo, Blaine and adjoining counties. Write for complete list. A. E. Baldwin, Anadarko, Oklahoma.

LEA COUNTY, NEW MEXICO, lease, 40 acres section 33, township 17, range 36. James R. Haynes, Grantville, Kansas.

WINKLER—PECOS COUNTIES
Leases and Royalties.
W. S. PATTERSON
Pecos, Texas.

WANTED—Good driller for 438-acre farm. Montgomery County, Mississippi. Best geology entire state. Write Box 184, Kilmichael, Mississippi.

FOR SALE — Half interest 850-acre lease, six wells, at big bargain. New Pool, entirely proven; shallow depth; long-lived sand. Need aid of responsible party to continue development. Will sell all but prefer retaining half interest. Full investigation invited. Address Geo. W. Smith, Monticello, Ky.

FOR LEASE by owner, 5,000 to 12,000 acres solid block in townships five and six, range seven, in Cimarron County, Okla. Mrs. O. M. Owensby, Pittsburg, Kansas.

MUSKEGON, MICHIGAN, Lease, 20 acres for sale in proven area. Three producing sands, 1,200, 1,650 and 2,050 feet. Information free. Wm. J. Wilson, 922 Majestic Bldg., Detroit, Mich.

LEASES—PRODUCTION

EIGHT SECTION RANCH in Howard County, Texas, for sale in fee. All leased for oil but has all the royalty. Price $15 per acre.
A. M. SULLIVAN
Coahoma, Texas

ATTENTION, brokers and investors: Write for our list of oil leases and oil royalties in Pontotoc, Seminole and adjoining counties. Bowles and Smith, First National Bank Bldg., Ada, Okla. Phone LD35.

FOR SALE—All or part interest in 3 new wells in new shallow territory. 600 ft. deep. Bartlesville sand. Three wells flush exceed 60-bbl. Come and inspect this real opportunity. M. H. Brown, 600 Peoria St., Paola, Kans.

FOR SALE—70 acres of land within 3 miles of developed oil field in Hancock County, Ky. Can lease 1,000 acres adjoining this land. Box C-633, The Oil and Gas Journal, Tulsa, Okla.

WOOD AND WOODARD COUNTIES
Development now active. 13,000 acres near Waynoka, Okla., now open for lease and drilling purposes, to responsible parties only. Will lease for grazing. Mrs. J. M. Hale, Waynoka, Okla.

WILL LEASE 2,000 acres solid block Colorado County, Texas, for 2,000 foot tests. Indications are this tract crossed by gas structure connecting other fields. Nearly all adjoining land held by oil companies. Box 961, Houston, Texas.

NEW MEXICO oil leases; Lea, Eddy, Chaves, Union, Quay and all other active counties; complete list and map on request. Orcutt-Harris & Co., Colcord Bldg., Oklahoma City, Okla.

LEASES—PRODUCTION

NEW MEXICO — Lease in Lea and Roosevelt; cheap royalties in Roosevelt and Guadalupe; leases in any county; information regarding New Mexico developments. William U. Tate, Franciscan Hotel, Albuquerque, N. Mex.

$3 TO $5 per acre for West Texas land with Oil and Mineral rights 40 acres up. New Mexico oil leases. Winter garden lots and truck farms on easy terms; agents wanted. A. Poe, 829 Wilson Bldg., Dallas, Texas.

ADVERTISING RATES

	1 Time	2 Times	3 Times	1 Mo.
3 lines	1.05	1.80	2.25	3.30
4 lines	1.40	2.40	3.40	4.40
5 lines	1.75	3.00	4.25	5.50
6 lines	2.10	3.60	5.10	6.60
7 lines	2.45	4.20	5.95	7.70
8 lines	2.80	4.80	6.80	8.80
9 lines	3.15	5.40	7.65	9.90
10 lines	3.50	6.00	8.50	11.00

(Six words usually make a line.)

Compute white space at the above rates. Mail your advertisement to

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

Inventory Time

is about here and you doubtless have quite a lot of machinery and tools which you no longer need. Why carry such items on your inventory for another year when you can dispose of them at a good price through The Oil and Gas Journal Classified Wants?

List your used machinery and equipment and send the list to us to be used as a classified advertisement. Buyers of used equipment scan these pages each week. Let them know what you have.

The OIL and GAS JOURNAL
PRODUCING REFINING MARKETING

CLASSIFIED WANTS DEPT.

FOR LEASE—880 acres. 10 year contract 50 cents rental. Township 11 South, Range 37 East, Lea County, New Mexico. Well going down within four miles. Will sell ½ of ⅛ royalty on 1,000 acres, or more. Address, J. R. Webb, Portales, New Mexico.

LEASES—PERMITS—UNUSUALLY CHEAP
12—350' wells now producing. More drilling and deeper sands being tested. New Mexico Shallow oil field. W. H. Davis, Box 163, Borger, Texas.

10 ACRE LEASE in Section 42, Block 26, N 10 and 11 Hendrick Ranch, Winkler County, Sections 40, 41 and 47, Gushers Block 26, One hundred dollars per acre. No triflers. Answer, Hiram Cole, 4949 Wise Ave., St. Louis, Mo.

FOR SALE OR LEASE, five hundred acres, Wheeler County, Texas—four hundred acres, Pecos County Texas—three hundred twenty acres, Culberson County, Texas—sixty acres, Reeves County, Texas—thirty seven acres, Pecos County, Texas. Address Post Office Box 1120, Station "C," Los Angeles, California.

MONEY RAISING

COMPANIES organized and financed. Address full details to, Box C-551-A, The Oil and Gas Journal, Tulsa, Okla.

FINANCE YOUR OWN project with shares bonded. Quickest, most satisfactory known method of raising capital. Information free. Bankers Interstate Security, Electric Bldg., Denver, Colo.

DO YO UNEED MONEY for organizing or financing oil or mining deals? Write 136 E. 13th, Oklahoma City, Okla.

CAPITAL SEEKERS
Will endeavor placing proposition of merit on underwriting basis. Box 44, Room 407, 26 Court Street, Brooklyn, New York.

ABSTRACTS

ABSTRACTS: TEXAS AND NEW MEXICO OIL FIELDS:
Hutchinson, Carson, Ward, Winkler, Yoakum, Stephens, Shackelford and Knox Counties, Texas, and LEA County, New Mexico. Prompt, efficient and responsible service through main office at Breckenridge, Tex., or any local office.
ELLIOTT & WALDRON ABSTRACT COMPANIES, INC.

Chicago Spot Market Reported Light

Large Refiners Holding Prices Firmly but Tendency Is Less Strong. Kerosene Quiet but Steady. Fuel Oil Stationary

By J. B. Waldo

CHICAGO, Nov. 5.—The spot demand for U. S. Motor gasoline was light in this market on Monday. Contract movement continues the chief activity. Prices were firmly held by the larger group refiners but one of the leading central state refiners offered its motor gasoline to dealers at 9¼ cents which had a tendency to make the price situation less strong. It was stated from the sales office of this refiner that this price was for delivery to points east of the Mississippi River and that shipments would be made from any of its three refineries. The same offer which was for over November included the 400 endpoint at 9¾ cents and the 375 endpoint at 10¾, with kerosene offered at 6 cents. Car lot marketers stated that they could buy freely of the U. S. Motor Gasoline from Group 3 refiners today at 9 cents. There was almost no demand for the higher tests in the spot market. There was considerable buying by the spot buyers during the latter part of last month and many of them are supplied for the present. The larger part of the sales were made at 9¼ cents.

Kerosene Quiet

Kerosene was very quiet but prices were steady distillates continue to move to the country but there was no active buying on Monday. A good 37-40 amber distillate was offered by a central refiner at 3⅛ cents over November. Buying by gas companies was done on Monday, a portion being confirmations of sales made last week and some of the business was closed at less than 2⅝ cents. Gas oil from West Texas was offered at 2¼ cents and will be accepted by gas companies.

A few inquiries for fuel oil were in the market Monday but the quantities were not large, many being for from one to five cars. There were no changes in prices.

The weather has turned clear and warm after two days of rain and the consumption of furnace oils is still light. Some of the lack of interest shown in the market is believed to be due to the election. Several of the leading major companies will close their offices all day Tuesday and a quiet market is anticipated for the next two or three days.

Just Rocking Along

The Chicago oil trade has adopted an expression that seems to fit local conditions. The phrase is "just rocking along." There was little animation in the local industry last week. In practically all branches of the industry from gasoline to heavy fuels, buyers were ordering just what they needed for their immediate wants and nothing over. There was apparently uncertainty regarding the election and just what might be the immediate effects on business. Men hesitated to begin new undertakings of any magnitude. "It is only a little time to wait and we might as well be sure before we go ahead."

Another cause of some slowing down of business was the weather. Generally it was too cool and wet for good gasoline weather and not cool enough for large consumption of oils for heating.

The shipments on contracts continue to be good and there are few dealers who are not taking out the full amount of their allotments. The total of these will be less for November than for October and preceding months as the contracts in nearly every case are based on average sales for each month over a period and less gasoline is distributed on the average during November. There is some controversy regarding the number of dealers who are renewing their contracts on the new basis. Some cases are known to the writer in which dealers have stated that they had refused to sign the new contracts based on a 3½ cent guarantee as they could not operate successfully on that basis. On the other hand the larger refiners report that their contracts are being signed. These refinery representatives have also stated that they were securing contracts from old customers who at first had refused to sign the new form with its smaller guarantee, as those dealers had found after looking around that they could do no better with any other responsible refiner.

Freight Costs Affect Contracts

It has been stated that some smaller refiners would make contracts which were a little more favorable in certain districts where the freight costs were unusually favorable. Also that some refiners who made only a 3½-cent contract on gasoline alone would make a larger guarantee if the dealer would handle the whole line.

Some dealers state that they have been able to make a sort of combination contract. These dealers have neither siding nor large storage, but they do have a large distribution. If located near the bulk plant of a refiner the arrangement is stated to be a regular marginal contract calling for delivery in tank cars, but as they cannot take in a full tank car, the refiner stores and hauls the gasoline and charges the dealer 1 cent a gallon for the service. In such cases, which are vouched for by responsible oil men, shipments are made in tank cars and delivered to the refiner's near-by storage and billed at the contract price for tank car shipments. The gasoline is hauled by the refiner, who charges the dealer 1 cent for the service. It is not believed that there are many such contracts, but responsible oil men assert that there are some in force which have been made rather recently.

The demand for gasoline still runs to the U. S. Motor grade and the spot price made by the larger refiners is now 9½ cents Group 3. One result of this lower price was that the dealers operating under their new 3½ cents margin with a split of the margin when the total of the spot market price, however determined, the freight to destination and the guarantee were more than the normal tank wagon price of the dealer at his location, were receiving in most cases the full guarantee. The refiners who had been holding their market at 9¾ cents for spot sales were able to do a little more spot business at the new and lower price but their spot business was still light.

Fair Spot Business Reported

The smaller refiners who were selling at 9¼ cents for the most part and the marketers who sold also at that price did what might be considered a fair spot business considering the season of the year, local weather conditions and also that it was the last week of the month during which week there is usually some slowing down in the demand. The dealer trade received quotations of 9¼ cents from several Oklahoma and North Texas plants and a few quotations were made to marketers at that figure although they could buy to sell with a profit at that price. The quotations from West Texas were still lower.

The West Texas gasoline seems to be averaging better as regards odor although there is still complaint. This source of supply will be increased between now and January 1 by the output from several new and what are said to be thoroughly modern plants which will be equipped with cracking stills and all the necessary machinery for producing a good yield of standard grades of gasoline.

The offerings of gasoline from the smaller plants were less free during last week than the preceding weeks and several advanced their price to inquirers. Some had accumulated a good run of orders and could not accept any more immediate business. Stocks of gasoline generally are still small although there has been a little accumulation, but supplies are so low with many of the larger plants that they would not find further accumulations burdensome, in fact they would be willing to carry more in their storage. They are reducing their runs in several instances if not generally and plan to continue to avoid any increase in stocks which might threaten the stability of the price structure.

Export Buying of Higher Gravities

There has been export buying of the higher gravities and those refiners who accepted the business offered by the exporters will run less of the U. S. Motor grade until their export orders are filled. There has been some increase in the demand for the higher gravities and prices are fairly firm. Some of the larger refiners when they reduced their U. S. Motor made an equal cut in all their gasoline quotations while others held the higher gravities unchanged. So many of the refiners today are concentrating on the running of U. S. Motor and antiknock gasoline with none of the higher gravities that these latter products are in what might be called a speculative position. If there is a good demand it is liable to result in shortages and if there is only a small demand the dealers will get along nicely with their two grades of U. S. Motor and a good antiknock gasoline, selling the latter at a premium over the regular price. Natural gasoline has been more active in this market and as the result of a larger demand on the producers the market has been fairly strong.

In Ohio and to some extent in the eastern portions of the Indiana territory, there is a renewal of competition that is nullifying attempts to stabilize the price structure. In Ohio the local Standard company having lost a good percentage of its business is now striving to win back its gallonage. To do this, according to the reported utterance of a leading official, it is adopting the tactics used by its competitors to take the business away from it. The Standard of Louisiana through a subsidiary is strong in Ohio and the Standard of New York is also getting Ohio business. The local and Kentucky refinery production is large and seeks first of all Ohio orders. The result is a situation that borders on chaos.

Keen Competition in Ohio

An oil man fully conversant with conditions in Ohio while in this city last week said that he never knew such keen competition for business and such utter disregard of all trade ethics to secure it. Some of the Mid-Continent companies who have had some business in that State are getting out of it and glad to be out. The regular price of U. S. Motor gasoline delivered in tank cars at any point in the State is supposedly 12½ cents. Freight rates from Group 3, will range from .024 cents to Cincinnati to 0.296 cents to Youngstown with perhaps some rates both above and below these costs which are to important points where there has been in the past a good market for Group 3 material. There is competition from the New Orleans plants in the southwestern part of the State around Cincinnati and the Atlantic Refining Co. gets a share of the business in the northwestern part of the State. As a result in part of this competition from all sides and from within as well as without, the local refiners are pushing their sales where they can outside of the State and they are becoming strong in Eastern Michigan and Indiana where they meet with the competition from the refiners in the Chicago district and the Central West generally.

Kerosene has been just about holding its own during the last week. The export buying prevented further declines in price for a while, but recent quotations again were indicating a weak market. Sales are made at prices ranging from 5⅝ to 6⅛ cents. The demand is not large and in many cases the kerosene order goes with the gasoline business, no matter what may be the price of the former. There was a light demand for the 42-44 from dealers who must have a low flash and this grade is commonly priced at one-half cent above the 41-43 gravity.

Steady Demand for Distillates

There is a continuing and rather steady demand for distillates, and refiners with distillates to sell report a good business. The demand is scattered and comes largely from the smaller distributers, although there is some buying by the larger operators. The latter for the most part are well supplied. There seems to be some return to the use of distillates this season. Last winter the gas oil group was getting the best business. This increase in the distillate orders as reported is due in some measure at least to the new burners for domestic use in smaller sized homes which are distillate burners only. Then the increase in business as reported by some refiners may come from the fact that several refiners who previously have been sources of supply are not such this season. At least four of the larger refiners in the group have little distillate to offer this season with the result that buyers from these refiners in past years who are not regular contract customers must turn to other sources of supply.

No runaway market is anticipated by even the most optimistic. Today the price of a good 38-40 gravity straw distillate is 3¾ to 3½ cents. At present the sales organizations in touch with the demand expect a 3¾-cent market and say that it may go to 4 cents, but that will be the top in their judgment under ordinary winter conditions. There is an occasional demand for distillates for some industrial purpose. Some of the railroads are using distillates for their oil-electric engines as they want a good, clean oil but this demand is occasional and does not count for much in volume.

Gas Oil Not So Strong

The U.G.I. gas oil is not quite so strong according to some sellers. They state that they have lost business at 2¾ cents. Margins are narrow on this oil and some sellers quote 2.35 cents instead of 2⅝ cents or even 2.3 cents. Some good gas oil is offered occasionally at 2¼ cents. the Group. Still such prices are exceptional and the market for these straight-run oils is being generally steadily held at 2⅝ to 2½ cents. The zero oils are waiting for cold weather, which is expected to bring a much larger demand.

There is even with out mild weather a steady demand for the various grades of furnace oils which are classed by most refiners in the gas oil group although some refiners class them as fuel oils. The 28-30 and the 30-32 as well as the 32-36 gravities have been in demand and that with the larger distributers supplied for the present and not buying.

The light color, low cold-test and flash oils with sweet odor are not in too plentiful supply and for the straw gas oil the

(Continued on Page 125)

Gasoline Down, Lubs Up on East Coast

Good Demand for Tank Car Motor Fuel, Weather Being Favorable. California's Position Continues Impressive

By Special Correspondent

NEW YORK, Nov. 5.—Lower markets for gasoline developed in East Coast territory this week. This, with a number of upward price revisions on lubricating oils, constituted the only changes in the price structure.

Standard Oil Co. of New Jersey initiated the downward movement with a quarter-cent cut on November 1, bringing the market down to 11 cents at Bayonne, Baltimore, and Parkersburg, W. Va. Other leading refiners followed, the decline extending to most of the Atlantic Coast terminals. The Philadelphia market is down a quarter to 11 cents, with the same quotation prevailing at several other points.

A mixed trend in lubricating oils developed, but most of the price revisions represented advances. Red and pale oils were higher for the first time in several months.

Export markets were rather quiet at East Coast terminals, but the market at the Gulf showed continued activity, with prices higher on several grades. Most export inquiry was for gasoline and naphtha for shipment to the Continent, with France continuing the largest buyer in the spot market. A number of refiners are reported sold up for some weeks ahead on their export grades, although this condition does not appear general.

Tank Car Gasoline

There has been a good demand for tank car gasoline, and jobbing markets have been fairly active. Weather conditions have continued mostly favorable and jobbers have been coming back for replacement supplies in substantial quantities. As a result the shipping movement from refineries is unusually large for this season. With an easing up with respect to the available supply, there has been sharpening in sales competition, with reports of slight concessions. While none of the larger refiners have been reported shading the established price, it was felt that a general reduction was in order to stabilize conditions. The decline, however, came without warning to the jobbing trade.

The reduction by Standard Oil Co. of New Jersey came somewhat as a surprise to some elements in the tank car market. Notwithstanding price cutting by some sellers, general conditions had shown improvement, due largely to well-sustained consumption at the Gulf. While some were talking higher prices, the rank and file was seriously considering the possibility of stabilization at 11¼ cents. The Standard of New Jersey cut was more or less in the nature of a seasonal readjustment and in line with the normal easing off in consumption. The reduction shows that trade leaders are keenly sensitive to market changes, and just as ready to get the market down in a period of slack demand and ample supplies as they are to advance it when peak demand and short stocks make such action necessary. Since the end of the season of peak consumption, the New Jersey company has taken the lead in "making the market." It was New Jersey which took the bull by the horns in the weak and unsettled market last month with a cut of a half cent to 11¼ cents, after the general market had made a wavering effort to maintain the pretense of an 11¾-cent basis, while booking business at 11½, 11¼, or even 11 cents.

California's Influence

California's position continues an impressive one. Holdings of gasoline at California refineries September 30 amounted to 9,339,000 bbls., more than one-third the total of 26,405,000 bbls. for the United States, and more than double the total stocks of 4,586,000 bbls. held by East Coast refiners. The position of the California market has been the subject of unusual interest to East Coast refiners, in view of the growing importance of the Pacific Coast industry in the export gasoline market. During the early part of October, California refiners booked a number of cargoes of gasoline for the Continent in competition with the Gulf, forcing sellers at the latter point to cut their prices. The movement of California gasoline to Russia evidently did not presage a regular business in that direction. At the time, it was reported Russian refining facilities had proved inadequate for the amount of business booked by the Soviet Naphtha Syndicate, and that the latter was buying California gasoline to fill out its deliveries. The Soviet trust contended at the time that the California motor fuel was being bought solely to use in anti-knock blends, which, in the light of subsequent developments, would appear to have been the case.

Tank Wagon Gasoline

Conditions are much the same as for some weeks. The tank wagon quotation holds at 18 cents, with a retail market of 20 to 21 cents. The demand for premium fuels is greater, with the usual 3 cents differential.

Considerable interest is being shown over reports regarding pending mergers among some of the larger companies in this area. These deals, apparently, are not beyond the rumor stage, but if they should go through, it is evident there will be some radical realignments in marketing territories in the East Coast area. Certain companies which have religiously kept to their own recognized territory, and for many years have withstood the temptation to invade neighboring markets will be forced to expand their territorial lines. If some of the reported deals go through, practically the entire East Coast area will be "open country" for all of the large marketers. This does not necessarily imply there are enough deals "on the fire" to involve most of the large companies in consolidations, but it does appear that the deals reported under way are of such magnitude they will bring many companies previously on most amicable competitive terms into sharp conflict. Should the mergers develop, large marketers not directly concerned will be forced to extend their marketing territories in self defense, to hold their volume and make up for any business lost through mergers bringing outside companies into their territory.

Despite the possibility of these startling changes, the outlook does not seem to be viewed with any great pessimism. Competitive conditions in the East Coast area are generally on a higher plane, and it is expected the intensified competition, if it should develop, will not be along the destructive lines which have done so much to injure the industry in this section.

Kerosene

Gallonage has held up well. Refiners are getting a good demand for tank car kerosene, and marketers are also moving large quantities through their tank wagon trade. Weather conditions have been rather irregular, and many consumers are still using kerosene heaters to take the chill out of the air in their homes, rather than start their furnaces. The market position has also been aided by a continued heavy export buying movement. Refiners generally are not carrying large kerosene holdings, not more than six to eight weeks' supply on the basis of current buying, in many instances. The tank wagon market remains steady at 15 cents, and some are already beginning to speculate on the possibility of the market going through the remainder of the year at this figure, making more than an entire year in which this quotation has remained undisturbed. The tank car market at Bayonne is firmly held at 9 cents for water white. Export quotations were steady to firm. Pennsylvania refiners are quoting kerosene lower, but the spread between the Pennsylvania quotation and the Bayonne refinery basis is not sufficient to permit of Pennsylvania oil selling in competition with the local product.

Lubs

Cylinder stocks have met with a better demand, and the market has strengthened. Steamed refined cylinder stock 600 is up 1 cent at 21 cents, with 635 quoted 1 cent higher at 22 cents, and 650 steam refined a cent higher at 24 cents. Pale paraffin oil 28 is a half cent higher at 7½ cents, with 250 red paraffin oil quoted a half cent higher at 11 cents. The changes in red and pale oils are the first advances for several months, and come as a result of the better demand. Bright stocks continued in easy position, with the price movement contrariwise to the general market. Light 140-150 bright stock was again lower at 41 cents, with dark bright stock quoted down to 39 cents. There was a good demand for cylinder stocks, buyers coming in to cover their requirements before the price advances went into effect. Demand has eased off since the higher price basis was named, however, with buyers waiting for the market to become established before operating further. Export demand has been of light proportions, but operators are expected to come back into the market in a short time. When buying is resumed, considerable quantities of lubs will be required to make up the quantities normally taken from this market which have not been arranged for during the quiet spell.

Industrial demand for lubs continued to run into large totals. Refiners are beginning to line up business in industrial oils for next year, and report a fair amount of buying interest on the part of large consumers. The textile branch continues to lag behind somewhat, and no real improvement in consumption of textile oils can be looked for from the cotton industry in the near future.

Diesel Oil

Marine consumption of Diesel oil continues to hold up well, and refiners are holding the market at $2 per barrel, bulk, at East Coast refineries. It is expected that consumption figures for the year will show sizable gains with continued expansion looked for in 1929 as many additional vessels with Diesel-electric drive will go into commission. Refiners have succeeded in keeping production closely balanced with consumption, and the market position is well stabilized. Industrial consumption of Diesel oil is of fair volume, but has not shown the increases looked for. The large railroads have not progressed beyond the experimental stage with their Diesel-electric powered locomotives, although there are several locomotives of this type now in service on the large eastern roads.

Paraffin

Steady to firm markets on all grades of fully refined wax ruled. The recent slump appears to have been fully corrected, and short sellers had but little opportunity to cover on some of their sales made earlier. Volume of business, although fair, is not up to that of two months ago. The trade thinks this is a temporary condition, and the hand-to-mouth buying of the past two months is pointed to as indicative of considerable buying withheld, with the probability that consumers will have to cover before the close of the year. There were no alterations in quoted prices, the market ruling steady at the advances made effective during the closing week in October. Heavy export shipments of wax are reported. There is nothing to justify the expectation of lower price schedules. Notwithstanding, some classes of buyers are reported to be still withholding business in anticipation of a break before the end of the year. Refiners are not liberal sellers of the later positions, few being willing to contract beyond December 31 under prevailing market conditions, and at current going prices.

Petrolatum

Domestic consumers have been in the market for stocks in better volume. Cream is moving in good volume at 6¼ cents a pound, with amber steady at 3½ cents and extra amber well held at a quarter cent over this figure. Sellers are doing 8¼ cents on snow white in a car lot way, with lily white held at a cent a pound under this figure. The market for dark green continues quotably unchanged at 2 cents a pound, with some export inquiry reported and buyers looking for supplies at 1.90 cents per pound in most instances.

Fuel Oil

Industrial consumption of fuel oil is running into large totals, and refiners are devoting more attention to their sales activities. Fuel oil prices are now so low fuel competes with nothing but tiself, and large industrial consumers have not been slow to see the economies offered by fuel oil. Marine consumption holds up well, and the increasing consumption of furnace oil continues one of the bright spots of an otherwise unfavorable market. Some cheer was derived by East Coast refiners from the September production statistics. Although both production and stocks showed gains during the month, the increases were not as large as during recent months. With continued heavy imports of South American oil, however, the fuel oil situation still appears far from bullish. Imports of crude from Venezuela for the first nine months amounted to 34,704,000 bbls., compared with 13,041,000 bbls. in the same period last year, while imports from Colombia were 9,528,000 bbls., against 5,363,000 bbls. Mexico fell off at 12,786,000 bbls., against 21,325,000 bbls. Refiners are beginning to appreciate the foresightedness of those refiners who initiated the campaign of selling bunker fuel on contract for three years in advance, instead of the customary one-year-in-advance bookings. With this business signed up, although at very low prices, the market is spared the necessity for a sharp contract booking campaign which could not help but break prices further in view of the present statistical position of fuel oil.

Gas Oil

Leading sellers continue to maintain the market at 5¼ cents on spot, with a good movement reported. Refiners report that considerable contract business for 1929 has already been written at 5 cents at which many sellers are now booking for immediate delivery. Furnace oil business continues an important factor with sales being made from 4¾ cents up. The large gas companies are heavy buyers, and while the bulk of this business consists of deliveries against term contracts, there is also some spot buying reported. Refiners have accumulated stocks of 28-30 gas oil in fair volume in anticipation of a sharp increase in consumption when the weather sharpens. There has been one good cold snap thus far, which brought out considerable furnace oil buying, but refiners believe the real demand has not yet been seen. Holdings of gas oil at East Coast refineries are now adequate for current needs, and it is not

(Continued on Page 125)

Development of American Oil Shale

Government Carrying on Experimental Work Covering Production and Refining Methods. Explain Results

By Harry H. Hill*
Research Department, Standard Oil Co. of New Jersey

The United States is fortunate in having, in its extensive deposits of oil shale, one of the largest potential sources of fuel in the world. These deposits should be considered as reserves of liquid fuel for, although some of the richer shales can be burned directly as fuel, it is unlikely that they will be utilized in that manner. The heating value of an oil shale yielding 42.7 gallons of oil a ton, which is considerably higher than the average oil yield from American shale, is only 4,400 B.t.u. per pound; this is much less than that of a poor grade of coal. The ash content is high, usually above 60 per cent, which means that, if oil shale is used as a solid fuel, it would have to be burned near the source of production, as it would not be economical to transport a fuel containing such a high percentage of inert material. In view of these limitations, it is believed that oil shale will be retorted to furnish liquid products of high heating value which can be conveniently transported to consuming centers.

The oil shale deposits of the United States are widely distributed, commercial deposits existing in at least nine states—Colorado, Utah, Kentucky, Indiana, California, Wyoming, Montana, Nevada and Oregon. These shales vary in oil content from less than 1 gallon a ton for relatively thick beds to as much as 90 gallons a ton for extremely thin beds, the estimated average yield for a thickness of 500 feet in the Green River formation of Colorado amounting to approximately 15 gallons a ton. Winchester,[1] an authority on oil shale, has estimated that the oil shales and similar deposits in the United States contain 144,162,197,000 bbls. (42 gallons each) of oil, of which 92,144,935,000 bbls. can be recovered. This is more than 100 times the production of crude petroleum in the United States for the year 1927, and 74 times the world production for that year. On the basis of heat units, this amount of shale oil is equivalent to 19,077,620,000 tons of bituminous coal, or 37 times the United States' production of that fuel in 1927.

American Oil Shale

Little or no oil, as such, is found in typical American oil shales, but carbonaceous materials are present, which, by destructive distillation, yield oils. These oils differ in many respects from crude petroleum in that they contain much higher percentages of unsaturated hydrocarbons, a lower percentage of gasoline than the average crude oil, a higher percentage of wax, and a relatively high percentage of nitrogen compounds which have a rather offensive odor. An analysis of a typical shale oil from Colorado is as follows:

Specific gravity, .901 (25.6 degrees A. P.I.).
Sulphur, 0.53 per cent.
Nitrogen, 1.79 per cent.
Setting point, 26 degrees Centigrade (79 degrees Fahrenheit).
Unsaturation of tops, 39.1 per cent.

The crude shale oil has a fairly high heating value, about 18,400 B.t.u. per pound, and, when distilled, yields fractions from which commercial products, such as gasoline, kerosene, lubricating oils, wax, etc., can be made by proper treatment. Owing to the high percentage of unsaturated compounds, it is difficult to manufacture light products which remain water white upon standing, and it is questionable whether lubricating oils of high viscosity can be made from shale oil. The crude shale oil is an excellent fuel oil, although it sometimes contains relatively high percentages of sediment in the form of free carbon; since it is usually solid at temperatures below 60 degrees Fahrenheit, it is often necessary to apply heat to make it flow to the burners. Doubtless, the best fuel oil from shale would be a product from a cracking distillation which had been topped to remove the more volatile fractions. Such a product would meet the requirements for flashpoint and would have a lower cold test than the original crude oil.

Although crude shale oil yields a relatively low percentage of gasoline and naphtha by straight distillation, it has been found that the yield of these products can be appreciably increased by subjecting the oil to a cracking distillation. The product thus obtained is difficult to treat for color and odor, but experiments indicate that, unlike the cracked products from crude petroleum, those obtained by cracking shale oil can be treated as easily as ordinary straight-run distillates.

Commercial Developments

A few years ago, when there was a threatened shortage of petroleum, an immense amount of interest was taken in the development of the oil shale deposits of the United States. Several thousand acres of oil shale land were leased or purchased, and at one time more than 100 oil shale companies were in existence. Many of these companies built small plants, but a number of them simply purchased oil shale lands and sold stock to the public. All of the plants which were built were too small to be considered of commercial size, but mostly they represent experimental plants for developing and testing new types of retorts. A plant of semicommercial size was operated in Nevada for a few years and marketed oil shale products both in this country and abroad. Another was operated in California for some time and produced an oil that was marketed as fuel oil. These plants are the only two which can be considered as approaching commercial operation. At the present time none of the plants owned by oil shale companies is in continuous operation, and only two or three are operated intermittently. Owing to the overproduction of crude petroleum in the United States and consequent low prices, the interest in oil shale has lessened to a considerable extent, although some of the larger oil companies have increased their oil shale holdings during the past three years.

Technical and Economic Problems of Oil Shale Industry

It is generally recognized that many problems of a technical and economic nature must be solved before an oil shale industry can be established in the United States on a profitable basis. In the mining of oil shale it must be determined whether selective mining should be employed, and only the richer material utilized, or whether the entire deposit should be mined by some system such as the caving method, or by stripping and using open-cut methods. At one time it was considered advisable to use somewhat similar methods to those employed in the mining of coal, but many mining engineers are now of the opinion that it would be better to adopt methods similar to those used in mining low-grade copper ores, and mine all the oil-bearing shale for a thickness of perhaps 200 to 500 feet. This method would, no doubt, result in a lower cost per ton, but the oil yield per ton would be appreciably lower.

It will be necessary to make an exhaustive study of retorting conditions before a successful method of retorting American shales can be developed. The Pumpherston retort, which has been used in Scotland for more than 25 years, produces a good grade of oil from American shales, but its throughput is low and it requires large quantities of water in the form of steam. Some of the American retorts have much larger capacities, but none of them has been operated for sufficient time, or on a wide enough variety of shales, to determine definitely whether it will prove satisfactory under different operating conditions. Work of a fundamental character is necessary to determine the factors which must be considered in designing retorts for operating on American shales.

Since shale oil is entirely different from crude petroleum it is probable that new methods of refining will have to be developed as it is unlikely that the methods used for refining petroleum will prove entirely satisfactory. It will also be necessary to determine the products which can be manufactured most profitably, for it is questionable whether shale oil will yield the same range of products now made from petroleum.

It will also be necessary to consider such problems as the transportation of shale oil or refined products, water supply, disposal of waste products, labor problems, etc. The richest and most extensive oil shale deposits in the United States are in sparsely settled sections of the country, where transportation costs are high and the market for petroleum products is limited. In these sections the rainfall is sparse and most of the water is required for agricultural purposes. It would be difficult, therefore, to obtain sufficient water for the refining of shale oil, even if a retort were used requiring no water. Again, the disposal of spent shale is a problem of major importance in the western states, as the valleys between the oil shale deposits are usually quite narrow and the river bottoms valuable for agriculture. The housing and welfare of the large labor force needed would also require consideration.

Laboratory Studies of United States Bureau of Mines

Realizing that information on the chemical and physical properties of oil shale and shale oil would be required before an oil shale industry could be started in the United States, the Bureau of Mines began a series of laboratory studies about eight years ago. These investigations included the determination of such properties as specific gravity, specific heat, heat of combustion, and thermal conductivity of the different types of American shales, the analysis of oil-shale ash, the determination of sulphur and nitrogen, and the development of a standard method for assaying samples of oil shale to determine the yield of oil. Studies were made of the effect on the yield and quality of oil, of retorting conditions, such as rate of heating, introduction of steam or other gases and size of shale retorted. Analytical distillations were made of the shale oils produced and special attention was paid to methods of treating the distillation products. The investigations also included studies of the coking properties of oil shale and the determination of the explosibility of oil shale dusts.

Experimental Plant

General and Historical: Although the laboratory investigations furnished valuable information on the problems which must be considered in producing oil from American shales, it become evident that before some of the problems could be studied it would be necessary to conduct experiments with large scale equipment. It was not considered advisable to ship large quantities of oil shale to Scotland to be tested in the retorting plants there, for it was realized that it would be necessary to study a number of conditions peculiar to the western states, where the largest and richest deposits are found. An appropriation was, therefore, requested for the erection of an experimental oil shale plant in western Colorado. The first appropriation of $90,000 became available on March 3, 1925, and this was followed by a second appropriation of $89,000, which was for the purpose of operating the plant until June 30, 1927. The plant was shut down on that date, owing to the failure of Congress to provide funds for its continued operation, but in December, 1927, a fund of $45,000 was voted for reopening the plant; this was followed by a later appropriation of $75,000 for operating the plant during the fiscal year beginning July 1, 1928. After a number of changes had been made to the plant, including the conversion of the tramway to a two-bucket system, operations were resumed on June 21 of this year.

Description

The experimental oil shale plant of the Bureau of Mines is located on Naval Oil Shale Reserve No. 3, near Rulison, Colo. The plant consists of two retorts, one a standard Pumpherston experimental retort of full commercial size and of the type used in Scotland for the last 25 years, the other, a retort of American design known as the N-T-U, two 35-horsepower boilers, a 40-horsepower gas producer, an oil-shale crusher, pipe still, storage tanks, etc. A 5,600-foot aerial tramway is used for transporting the shale from the mine to the retorting plant.

The retorts were selected on the basis of information gained in the laboratory studies supplemented by a field study of the retorts proposed or in use in the United States and other countries. Both types are well adapted for experimental studies and have been operated for a period long enough to establish their ad-

(Continued on Page 164)

TABLE 1

	Oil from Pumpherston retort				Oil from N-T-U retort			
Specific gravity	0.890				0.920			
A.P.I. gravity	27.5 degrees				22.3			
Sulphur	0.66 per cent				0.85 per cent			
Pour point	55 degrees Fahrenheit				75 degrees Fahrenheit			
Saybolt Universal viscosity at 70 deg. Fahrenheit	65 Seconds				Solid			
Saybolt Universal viscosity at 100 deg. Fahrenheit	47 Seconds				112 Seconds			
	Per cent	S. G.	°A.P.I.	Viscosity	Per cent	S. G.	°A.P.I.	Viscosity
Gasoline and naphtha	15.9	0.793	46.9		8.5	0.804	44.5	
Kerosene distillate	....	....	....		....	....	....	
Gas oil	30.1	0.862	32.7		23.1	0.866	31.9	
Nonviscous lubricating distillate	17.1	0.892-0.922	27.1-22.0	50-100	10.7	0.896-0.923	26.4-21.8	50-100
Medium lubricating distillate	Indeterminate			100-200	8.7	0.926-0.933	21.8-20.2	100-200
Viscous lubricating distillate	Indeterminate			Above 200	11.3	0.933-0.939	20.3-19.2	Abv. 200
Residuum	10.9	0.987	11.9		36.9	0.997	10.4	
Carbon residue of residuum	7.1				7.1			
Carbon residue of crude	0.8				2.6			

*Mr. Hill recently resigned as chief petroleum engineer of the United States Bureau of Mines.

[1]Winchester, Dean E. The Oil Possibilities of the Oil Shales of the United States; Report 2, of the Federal Oil Conservation Board, January, 1928.

AUTOMATIC FLOWING OF SMALL OIL WELLS

(Continued from Page 36)

head releases the gas pressure in that tube, thus relieving the pressure on the small diaphragm of the starting control which causes air under the operating pressure to flow down the 2-inch string. The pressure thus imposed upon the fluid in the trap closes the standing valve and induces flow up the flow string. This flow is assisted by the gas entering the flow column through the booster hole. The copper tube connection convexing downward from the top of the pilot string on the casing head to the diaphragm of the starter control is shown in the photograph. By another method of operating the starter control, air under low pressure is passed down the pilot string. When the foot of the pilot string becomes emersed in oil, the additional pressure which must build up to force the oil out of the pilot string operates the diaphragm of the starter control.

When the flow has continued long enough to empty the trap, the velocity through the flow string increases due to the lightening of the flow column. The pressure at the right angle elbow connection between the top of the flow string and the lead line is raised by this increased velocity. The additional pressure is transmitted to the diaphragm of the shut-off control through a copper tube connecting the elbow at the top of the flow string with the shut-off control diaphragm as shown in the photograph.

The air line between the compressor and the well stands vertically under the large diaphragm. The 2-inch pipe below the large diaphragm and at right angles to the main air line is an exhaust line through which pressure in the well is released when the flow is shut off.

The reservoir trap used in the well has a capacity of slightly less than one barrel so that in flowing small wells the standing valve operates only a few times each day. The only reasons for pulling wells being operated by this method are the failure of the standing valve, corrosion of the trap and tubing, and shooting and cleaning out jobs. Field trials which the Tidal Oil Co. has been conducting during the past year indicate that this automatically controlled flowing device reduces their lifting costs approximately 50 per cent. The method is especially adapted to the operation of small wells on properties that are being repressured.

GASOLINE DOWN, LUBS UP, ON EAST COAST

(Continued from Page 123)

expected much of this oil will come forward from California. With the demand for the straightrun product for cracking having subsided with the end of the season of heaviest consumption, there has been an appreciable easing off with respect to supplies, and current output is running into large totals. Gas and fuel oil content of the types of crude being most generally run at East Coast refineries is large, and because of the more liberal supply, the gas oil outlook is not as strong as a few months ago. With demand running into large totals, refiners do not anticipate any material easing off in the price basis.

Exports

Gasoline demand has been centering principally at the Gulf, with a fair volume moving to Europe. One cargo was reported closed for shipment to France. The cargo involved 7,000 tons, 2,000 tons of U. S. Navy at 9⅜ cents and 5,000 tons of 64-66, 375 endpoint, at 11½ cents. The latter quotation represented an advance of a quarter-cent over the previous week's level. Sales were also reported of 60-62, 390 endpoint, at the Gulf at 10⅞ cents, an advance of an eighth-cent for the week. Navy gasoline in cases was unchanged at 26.40 cents at East Coast points, but bulk stocks were all lower. Navy in bulk declined a quarter-cent to 10¾ cents, with 64-66, 375 endpoint, naphtha down a half cent to 12¼ cents and 66-68 degree naphtha a quarter-cent lower at 15¼ cents.

More inquiry for kerosene for export was reported. Cased kerosene is held at 17.65 cents for standard white and 18.90 cents for water white. Bulk kerosene is quotable at 7¾ cents for prime white and 8¾ cents for water white at East Coast refineries and 6¾ cents for prime and 7¾ cents for water white at the Gulf. European buying has been an important factor in the kerosene market.

Petroleum Exports

The following table shows principal exports of petroleum and refined petroleum products from New York during the past three weeks (all figures in gallons unless otherwise noted:)

	Week Ended		
	Oct. 26	Oct. 19	Oct. 12
Gasoline	118,400	69,600	572,300
Naphtha	2,011,200	3,917,800	1,320,200
Kerosene	155,500	40,000	1,122,700
Fuel oil		18,100	7,400
Lubricating oil	3,169,000	586,400	2,765,600
Petroleum, ref.	2,622,200	1,031,000	1,487,700
	Pounds		
Petrolatum		68,000	239,600
Paraffin wax	1,678,900	3,118,100	1,489,300
Refined	222,500		
Scale	410,700	275,000	692,800
Lub. grease	1,546,000	7,416,400	966,700

Imports

Imports of crude and refined oils at the principal United States ports for the week ended October 27 totaled 1,497,000 bbls., a daily average of 213,857 bbls., compared with 1,743,000 bbls., a daily average of 249,000 bbls. for the week ended October 20 and a daily average of 208,571 bbls. for the four weeks ended October 27.

(Barrels of 42 U. S. gallons.)

At Atlantic Coast Ports—	
Baltimore	153,000
Boston	143,000
New York	733,000
Philadelphia	163,000
Total	1,192,000
Daily average	170,286
At Gulf Coast Ports—	
New Orleans and Baton Rouge	305,000
Total	305,000
Daily average	43,571
At All United States Ports—	
Total	1,497,000
Daily average	213,857
Daily average four weeks ended	208,571

California Oil Receipts

Receipts of California crude and refined oils at Atlantic and Gulf Coast ports for the week ended October 27 totaled 285,000 bbls., a daily average of 40,714 bbls., against 291,000 bbls., a daily average of 41,571 bbls. for the week ended October 20 and a daily average of 39,429 bbls. for the four weeks ended October 27.

(Barrels of 42 U. S. gallons.)

At Atlantic Coast Ports—	
Baltimore	95,000
New York	190,000
Total	285,000
Daily average	40,714
At Gulf Coast Ports—None.	
Total Atlantic and Gulf Coast ports	285,000
Daily average	40,714
Daily average four weeks ended	39,429

Distribution of total California oil receipts is as follows:

Crude	
Gasoline	285,000
Total	285,000

CHICAGO SPOT MARKET IS REPORTED LIGHT

(Continued from Page 122)

refiners are asking premiums and holding a good part of what they run. West Texas oils are freely offered, but the dealers are afraid of the odor and some distributers specify that no Texas oils will be considered or received if delivered by the seller. The season of closed windows in both cars and homes has arrived and any objectionable odor is noticeable. The industrial demand is rather slow in giving its orders, but the volume of business is fairly large and will probably so continue. Gas companies will use more oil with the longer nights and the big consumption of furnace oils is still ahead of the industry so that in spite of some increase in stocks, prices will hold their own and may work upward.

Fuel Oil Demand Fair

What has been said of the gas oil group applies to the lighter fuel oils. Heavy fuel oils with a good cold test and viscosity and odor are steady. Some say that the market is a bit stronger. The heavy oils from West Texas crude and the residual oils from some cracking processes are plentifully supplied and the market here is barely holding its own. The demand is fairly large and steady in volume as a whole. Some of the industries are not as active and use less oil while others are drawing larger quantities from their storage.

Lubricating Oils Quiet

Lubricating oils are rather quiet. Neutrals were weak and there was keen competition between the central refiners and those in the Mid-Continent Field and along the Gulf Coast for business with the nearby plants offering some prices that were below the ideas of the other refiners. Bright stocks were fairly steady as compared with neutrals. Motor oils are moving slowly, buying being restricted to immediate wants. The industrial movement was reported to be without special feature.

BOGGY CREEK ONLY ACTIVE FIELD IN EAST CENTRAL TEXAS DISTRICT

By Neil Williams

CORSICANA, Tex., Nov. 5.—Operations in East Central Texas district the past week were unusually quiet and the only active rigs were in the Boggy Creek Dome on the Anderson and Cherokee county line. One wildcat, White and associates' No. 1 Southers, in Milam County, was abandoned as dry in chalky lime at 1,710 feet. It has been shut down several months.

The only development outside of routine drilling at Boggy Creek was the decision of operators to drill E. L. Smith and associates' No. 1 River Bed deeper. The hole was to have been abandoned last week in chalk at 3,561 feet because of a question as to its location.

However, with the recent acquisition by the Humble Oil & Refining Co. a half interest in the Neches River Bed rights and the well with Smith and associates it has been decided to resume drilling. The test has been watched as an important wildcat in view of its location about midway between production on the north and the south sides of the dome.

Humble Oil & Refining Co.'s No. 1 Guaranty State Bank, a wildcat on the northwest flank of the dome, has drilled to 3,939 feet in sticky shale without favorable developments. This is somewhat deeper than the depth of the sand on the productive southeast flank.

This company's No. 3 Weinberg on the northeast flank in Cherokee County Monday was drilling hard shale at 2,851 feet. On the southeast side, two tests were in the chalk with casing cemented. No. 1 Todd was in chalk at a total depth of 2,931 feet and No. 2 Holloway at 2,900 feet. Casing always is cemented in the chalk in Boggy Creek wells.

Humble's No. 2 Lizzie Smith is waiting surface casing cement to set at 1,480 feet before drilling deeper.

On the Bethel dome, also in Anderson County, Pure Oil Co. was to have spudded in on its second test, No. 2 Willie Bruce. this is 2½ miles southeast of Bethel. Woodley & Nichols have rigged up for their No. 1 Kennedy in the William Brewer survey.

Amerada Petroleum Corp. is to drill a wildcat in Smith County. This will be on the Christian tract in the F. Flores survey. A rig is up but drilling has not been started.

Daily average production of East Central Texas fields for the week was 21,834 bbls., a decrease of 1,092 bbls. from that of the previous week. Figures by fields are:

East Central Texas

Boggy Creek	1,224
Cedar Creek	265
Currie	555
Mexia	6,519
Minerva	745
Nigger Creek	480
Powell	9,946
Richland	470
Thrall	35
Wortham	1,595
Total this week	21,834
Total last week	22,926
Decrease	1,092

Late Fields

(Continued from Page 42)

ity. This new well is the fourth producer to be finished in the deep zone, which is yielding 14,000 bbls. daily at present.

George Getty's No. 17 Nordstrum incidentally is the largest single producer, as it is making 5,500 bbls. daily. This well is one of the most unique completions ever finished in California. It was producing 4,000 bbls. of recovered oil daily while burning out of control at the mouth. This was accomplished by tapping the casing 48 feet below the surface with four 3-inch vacuum lines. A giant crane placed a heavy cone containing several gates over the mouth of this burning well last Saturday afternoon and it was successfully brought under control about two hours later, with the result that daily production built up almost immediately to approximately 5,500 bbls. daily. The gates on this giant cone, which measures approximately 10 feet in diameter, were not entirely closed in order to minimize the possibility of building up too high a pressure, as the control of this well has been accomplished merely by sheer weight of the cone, as the fire prevented the installation of any fittings.

GULF COAST

HOUSTON, Tex., Nov. 6. — South Texas Petroleum Co.'s No. 2 Morris, on the south edge of the Humble Field, has been completed, flowing 500 to 600 bbls. of pipe line oil from a deep sand at 4,350 feet. Gulf Production Co.'s No. 27 Davis, Big Creek, was brought in late Monday flowing 500 bbls. pipe line oil from a sand at 2,648 feet. This is an old well worked over.

WEST TEXAS

FORT WORTH, Tex., Nov. 6.—Shipley and associates' No. 1 Hazlett, Section 17, Block 5, southeastern Ward County, appears to be an east side well. Corrected reports state the well had sand pay at 2,480-81 feet. It has 500 feet of fluid in the hole that tested 32.5 gravity corrected and 34 gravity at 75. There is some gas and the oil has a strong sulphur odor.

Louisiana Oil & Refining Corp.'s No. 1 Abrams, southern Howard County, cored saturated lime at 2,442-69 feet and is preparing for a swab test.

Return of Debenham May Have Bearing on World Oil Conference

NEW YORK, Nov. 5.—Oil company executives who have been active in the agitation for some curtailment of South American oil production attach considerable significance to the visit here of A. S. Debenham, director of the Asiatic Petroleum Co., who is here for a short time.

Although it is stated that Mr. Debenham's visit is of no particular significance, aside from his intention to study thoroughly the outlook for the petroleum markets for next year, it is thought his visit will go beyond this routine posting.

Sir John Cadman, chairman of the Anglo-Persian Oil Co. is on the program of the American Petroleum Institute at Chicago in December.

Venezuela continues to loom larger as production develops. That country is now producing close to 340,000 bbls. daily, compared with about 316,000 bbls. daily in September. Production in October, last year, averaged about 194,300 bbls. per day.

Producers, in order of volume, are Royal Dutch, Pan American Petroleum & Transport, Gulf Oil Corp., British Controlled Oilfields, Falcon Oil, and General Asphalt.

Oil circles hear that a grouping of several Venezuela oil properties is in the making. Venezuela Petroleum is one of the properties mentioned.

Brief Items for Petroleum Refiners

NEW MIDWEST MANAGER OF SALES AT DENVER

F. L. Cochran, manager of the Minneapolis sales division of the Standard Oil Co. of Indiana, has been transferred to Denver as manager of sales for the Midwest Refining Co., under the supervision of H. G. Naylor, vice president in charge of sales.

The Midwest entered the retail marketing business in May, 1927, through the A. A. Vickers Petroleum Co. in Colorado and New Mexico and other subsidiaries in Wyoming and Montana. Previous to that time the Midwest was not a retail marketer. Competition between the refiners in this territory is becoming very keen. About the time the Midwest entered that field the Shell-Union Oil Co. made an aggressive campaign to increase its outlets in this territory through the Navy Gas & Supply Co., it being reported this company secured 85 outlets in 30 days from one of its principal competitors.

Along with these changes is a well-defined report that the Standard Oil Co. of California may enter the retail marketing end in the Rocky Mountain area. This company is building a refinery at El Paso, Tex., through its subsidiary, the Pasotex Petroleum Co., and has its own crude production in West Texas. It is expected to market the output of this plant in part in New Mexico and Colorado. Through another subsidiary, the California Co., it is a large producer of crude in the Kevin-Sunburst Field in Montana, but has no refinery in that territory. The same company is doing considerable exploration work in eastern Idaho and western Wyoming, and also has a large interest in the Marland acreage in Lea County, New Mexico. Should these plans materialize, the construction of a refinery in Wyoming or Montana would not come as a surprise.

HUTCHINSON REFINERY RESUMING OPERATIONS

After standing idle for several years, the Hutchinson Oil Refining Co.'s plant at Hutchinson, Kans., will resume operations during November, running up to 1,500 bbls. daily. A Frederickson, president of the company, has announced several additions to be made to the plant to increase its efficiency and capacity, probably the most important of these being a new Trumble cracking unit. Crude oil produced locally will be run at the plant and refinery runs have remained indefinite, due to the construction work going on. After the various changes are made, the plant will have a capacity of about 1,500 bbls. daily. The plant was formerly owned and operated by the United Oil Refining Co.

MOVES TO INCREASE GASOLINE TAX

CHICAGO, Nov. 3.—Charles M. Babcock, commissioner of highways for the State of Minnesota, has proposed that the gasoline tax in that State be increased from 2 to 4 cents a gallon. The increase will be brought before the next session of the legislature. The added proceeds, if the change is made, will be devoted to the building for more hard roads.

TWO BILLIONS FOR ROADS

An expenditure of $2,000,000,000 is being made annually for highways in the United States, according to the National Paving Brick Manufacturers Association, clearly showing the extent reached in the program of "better roads." In turn this may be interpreted as meaning a continuation of the constantly mounting gasoline consumption.

NEW GASOLINE TAX IN ILLINOIS

CHICAGO, Nov. 3.—It has been stated that there would be a gasoline tax in force in this State by the early spring. The legislature will meet right after January 1, and the proponents of the tax are ready with a measure which they state will meet the objections raised and sustained by the Supreme Court against the last gasoline tax measure. Secretary of State Emerson, who is the Republican candidate for governor, stated when the last gasoline tax was before the legislature that the current collections from motorists and the bond issues already available would care for all possible road improvements, even at a high rate of construction. If he still maintains the same views, the new tax proposal will not become an administration measure if he is elected. The legislature, which will convene right after January 1, 1929, will include many new members and it may not be ready to consider new legislation for several months.

RATES IN ARKANSAS TO BE INVESTIGATED

SHREVEPORT, La., Nov. 3.—The Arkansas Railroad Commission has issued an order calling for a general investigation of freight rates on gasoline, kerosene, lubricating oils and other petroleum products shipped into the State, hearings in which are to be announced soon. The investigation of interstate rates will correspond with a general investigation of intrastate rates ordered by the Interstate Commerce Commission, launched upon complaint by Barnsdall Refineries, Inc., that rates of the Santa Fe and other railroads from Gulf Refining Co. points of origin are prejudicial. Any part of the record in the Interstate Commerce Commission case may, by agreement, be entered as a part of the record in the Arkansas case.

MID-CONTINENT REPRESENTED

E. D. Murphey, safety engineer for the Mid-Continent Petroleum Corp. has been named chairman of the Mid-Continent section of the National Safety Council. Mr. Murphey has been active in this work for several years and has served as a member of the executive committee of the association for the last two years.

MOVES ITS OFFICES

ST. LOUIS, Nov. 3.—The Warson Petroleum Co. is now located in new offices in the Paul Brown Building at Ninth and Olive Streets.

WILL DOUBLE CAPACITY OF REFINERY AT CRAIG

The Texas Corporation is planning to double the capacity of its refinery at Craig, Colo., beginning the first of the year. The company has a complete refinery at that point which is operating on crude from the Moffat and Iles Domes, its charging capacity being 750 bbls. daily. It also is equipped with Holmes-Manley cracking stills with a capacity of 500 bbls. per day. The expansion program includes the construction of additional tankage for storing crude and refined products.

The plant at present is not large enough to handle all of the company's production from either of the two pools and that which is not run into storage is shipped in tank cars to its Casper refinery. This involves freight charges not only on the crude to Casper but on products back into the territory and the plan to increase the capacity of the plant is in line with the company's policy of building neighborhood refineries near the crude production to supply the surrounding territory. Guy Shefstead, superintendent at Craig, has returned from New York where the plans for enlargement were discussed.

NEW DISTRIBUTORS

CHICAGO, Nov. 3.—The Leach Oil Co. has been organized at 1318 Cass St., Joliet, Ill., to deal in gasoline, oils and other petroleum products. The incorporators are: J. A. Oehlhaver, H. F. Leach and C. S. Newell. The capital stock is $10,000.

The Midland Oil Co., 2209 West Harrison St., Chicago, will also start operating and will deal in gasoline, oils and fuels. The new organization is incorporated for $20,000.

FIRE AT PITTSBURGH PLANT

Eight stills, a machine shop, barrel house and several storage tanks were destroyed or damaged in a fire at the Coraopolis, Pa., plant of the Waverly Oil Works several days ago. The damage has been estimated in excess of $100,000. Sparks falling on the refinery grounds from a passing locomotive is believed to have caused the fire. The work of rebuilding the plant is already under way.

MISSISSIPPI TAX INCREASE

Mississippi legislators will be asked to vote on a bill proposing a 5-cent gasoline tax and if passed it will become effective immediately. At present the tax is 4 cents, the bill calling for an increase of 1 cent.

ILLINOIS GASOLINE TAX SUIT

CHICAGO, Nov. 3.—Judge Briggle of the Supreme Court at Springfield, Ill., has taken the case involving the refunding of the gasoline road tax paid under the Illinois law which was declared illegal, under advisement. The records and briefs filed are so voluminous he declined to set any date when a decision might be expected. In its final stage the case will form a precedent as no case involving the refund of taxes covered into the state treasury has ever been decided. Suits involving somewhat similar but not identical conditions have been before the courts in questions regarding railroad taxation.

EMPIRE CO. PURCHASES OSBORNE OIL STATIONS

Announcement of the purchase of the Osborne Oil Co., Rockford, Ill., which operates more than 20 bulk and service stations in and around Rockford, by the Empire Oil & Refining Co. is made by Empire officials. The new property will be operated by the Cities Service Oil Co.

The Cities Service Oil Co. by this purchase also acquires an extensive tank wagon business in 25 counties in northern Illinois and southern Wisconsin formerly maintained by the Osborne interests.

This important addition to the Cities Service Oil Co. follows announcement that the Empire Oil & Refining Co. is to build a big refinery at some point along the Mississippi River in eastern Iowa. This projected refinery will be served by a 10-inch crude oil pipeline to be built from southern Kansas and at the start will have a daily capacity of 10,000 bbls. According to announced plans, this daily capacity is to be doubled at an early date after operation is started.

NAMED SUPERINTENDENT OF AMARILLO PLANT

J. S. Worden has been appointed superintendent of The Texas Company's Amarillo, Tex., refinery, having been transferred from the company's Port Arthur, Tex., plant. This addition to The Texas Company's group of refineries is the result of the purchase of the plant from the Amarillo Refining Co., built just a few years ago. Except for the probable addition of two Holmes-Manley cracking units, plans for the expansion of the present refinery operations remain indefinite. Mr. Worden took charge of the operations on November 1, the date on which The Texas Company took over the properties.

YEAR WITHOUT ACCIDENT

CUSHING, Okla. Nov. 6.—Employes of the Cushing refinery of the Empire companies have just completed an entire year during which no accidents of any kind occurred. This remarkable record was made possible by full co-operation between the refinery executives both here and at Tulsa and the refinery employes in Cushing. A Safety First program has been actively stressed and a Safety Council, composed of refinery employes, meets regularly to discuss possible hazards and proposed improvements designed to eliminate accidents.

JENSEN NAMED MANAGER

E. E. Jensen has been appointed manager of the jobbing department for the Swan-Finch Oil Corp. and will take charge immediately. Mr. Jensen was formerly head of the lubricating department of the Independent Oil Men of America and prior to that had been in sales work for the Acme Petroleum Co.

RAIL TRANSPORTATION OF PETROLEUM GAINS

An increase of 6.9 per cent in the rail transportation of petroleum products during the last quarter of this year compared to that of the same period last year is forecast by the American Railway Association. An increase is predicted in each section but the New England territory is expected to show the greatest. While the Southwest Board territory does not show a gain equal to the average from the standpoint of percentage, it shows the greatest gain in the number of cars to be moved. The estimated car loadings for all sections stand at 595,121 against 556,717 for the same quarter last year. The following is a table showing these estimates according to the respective divisions:

	Carloadings		Estimated per cent increase
	Actual 1927	Estimated 1928	
Total all reporting districts	556,717	595,121	6.9
New England board territory	22,124	24,778	12.0
Atlantic State board territory	75,177	82,695	10.0
Allegheny board territory	19,876	20,945	5.1
Great Lakes board territory	18,122	18,465	1.9
Midwest board territory	38,836	42,700	9.9
Northwest board territory	2,171	2,280	5.0
Trans-Missouri-Kansas board territory	65,541	68,817	5.0
Southeast board territory	56,093	61,702	10.0
Southwest board territory	182,667	191,800	5.0
Central western board territory	28,684	31,300	9.2
Pacific Coast board territory	39,915	41,000	2.7
Pacific Northwest board territory	8,011	8,639	7.8

Natural Gasoline Manufacture

MID-CONTINENT AT CALIFORNIA CONVENTION

The Mid-Continent natural gasoline industry will be well represented at the California Natural Gasoline Association Convention according to the plans of manufacturers there. A review of the program shows that some very live subjects will be discussed and much interest is expected to be centered in the discussion of "The Value of Natural Gasoline to the Refiner in Blending Motor Fuels," by Dr. G. G. Brown and in the questions and answers which will follow. The meeting will be held over a two-day period, November 13 and 14 at the Biltmore Hotel in Los Angeles. The complete program appears below.

PROGRAM — ANNUAL MEETING, CALIFORNIA NATURAL GASOLINE ASSOCIATION, NOVEMBER 13 AND 14, 1928, LOS ANGELES, CALIF.

MORNING SESSION

Tuesday, November 13, 1928

8:00 a.m. Registration begins.
(Place—Foyer of Ballroom, Biltmore Hotel, Southeast end of Galleria)
9:30 a.m. President's Address. (Biltmore Hotel, Ballroom)
10:00 a.m. Reports of Standing Committees.
10:30 a.m. Paper: "The Compression of Gasoline Plant Vapors"; prepared by a committee of Association, headed by J. C. Bolinger and the paper to be presented by J. C. Bolinger.
11:15 a.m. Paper: "The Determination of the Vapor Pressure of Natural Gasoline"; prepared by the Vapor Pressure Committee of the California Natural Gasoline Association and presented by H. S. Wade.
12:00 Noon to 2:00 p.m. Recess for luncheon.

AFTERNOON SESSION

(Biltmore Hotel, Ballroom)

2:00 p.m. Paper: "Use of Gas and Gasoline Analysis in the Practical Operation of a Gasoline Plant"; prepared by the Gas Analysis Committee of the California Natural Gasoline Association and presented by A. J. L. Hutchinson.
3:00 p.m. Paper: "Some Considerations Affecting Absorption and Distillation in Natural Gasoline Plant Design and Operation"; paper to be presented by E. G. Ragatz.

MORNING SESSION

Wednesday, November 14, 1928 (Biltmore Hotel, Ballroom)

9:30 a.m. Address: "The Value of Natural Gasoline to the Refiner in Blending Finished Motor Fuels"; by Dr. George Granger Brown, Professor of Chemical Engineering, University of Michigan; Director of Research for the Association of Natural Gasoline Manufacturers.
12:00 Noon to 1:30 p.m. Recess for luncheon.

AFTERNOON SESSION

1:30 p.m. Continuation of Doctor Brown's address.
Discussion.
4:30 p.m. Adjournment.

EVENING SESSION

(Biltmore Hotel, New Ballroom)

7:00 p.m. Banquet and entertainment for members and visitors. Toastmaster and speakers to be announced later.

INCREASE IN NATURAL GASOLINE PRODUCTION

Natural gasoline production showed an increase of 1,300,000 gallons during September compared to August and was 8,700,000 gallons more than the production for September of last year. Every section showed a slight gain over last month with the exception of California, the latter dropping from 48,700,000 gallons to 46,200,000 gallons for the month. Balancing this, Texas increased its production from 26,200,000 gallons to 28,100,000 gallons and thus showed a greater gain than any of the other states.

Natural gasoline stocks were increased for the first month in several months the total being 18,323,000 gallons on October 1 compared with 17,408,000 gallons on the first day of the month. The detailed summary of production and stocks as reported by the United States Bureau of Mines appears below:

NATURAL GASOLINE
SEPTEMBER, 1928
(Thousands of gallons)

	Natural Gasoline: Production Sept. 1928	Aug. 1928	Jan.-Sept. 1928	Sept. 1927	Stocks-End of Month Sept.	Aug.	Blended Motor Fuel, September, 1928: Natural Gasoline Used	Naphtha or Other Oils Used	Stocks End of Month
Appalachian	6,800	5,800	72,000	5,600	2,083	1,640	121	190	226
Ill., Ky., etc.	1,000	900	10,300	1,200	284	270	56	8	13
Oklahoma	48,400	47,700	439,200	47,600	7,507	7,643	1,486	2,160	639
Seminole	18,000	.....	.....	.....	1,323	.....	14	3	6
Osage County	8,600	.....	.....	.....	1,952	.....	370	374	163
Rest of State	22,200	.....	.....	.....	4,232	.....	1,102	1,783	470
Kansas	2,900	2,900	26,200	2,900	648	628	32	2	6
Texas:	28,100	26,200	239,400	26,300	4,599	4,207	237	444	96
Panhandle	10,300	.....	.....	.....	1,907	.....	150	193	31
North Texas	3,600	.....	.....	.....	553	.....	4	69	4
West Central	12,800	.....	.....	.....	2,003	.....	30	141	53
Rest of State	1,400	.....	.....	.....	136	.....	53	41	8
Louisiana	4,700	4,600	41,100	3,800	859	729	25	27	20
Arkansas	2,700	2,700	24,200	2,600	292	443	4	4	10
Rocky Mountain	4,200	4,200	34,000	3,900	748	532	.....	.....	1
California:	46,200	48,700	399,400	42,400	1,303	1,316	Not available		...
Long Beach	17,600	.....	.....	.....	.....	.....	.....	.....	...
Ventura Ave.	4,800	.....	.....	.....	.....	.....	.....	.....	...
Seal Beach	2,300	.....	.....	.....	.....	.....	.....	.....	...
Hunting'n Bch.	4,000	.....	.....	.....	.....	.....	.....	.....	...
Santa Fe Spgs.	2,800	.....	.....	.....	.....	.....	.....	.....	...
Rest of State	14,700	.....	.....	.....	.....	.....	.....	.....	...
U. S. Total	145,000	143,700	1,285,800	136,300	18,323	17,408	1,961	2,835	1,010
Daily average	4,830	4,640	4,690	4,540	.....	.....	.....	.....	.....

The indicated output of motor fuel from the above and other sources may be expressed by the following table (Thousand of gallons):

	Sept. 1928	Aug. 1928	Jan.-Sept 1928	Sept. 1927
Gasoline produced at refineries * †	1,408,800	1,429,600	11,558,300	1,164,100
Natural gasoline blended at plants east of California	2,000	2,200	22,100	2,600
Natural gasoline sold direct to jobbers	2,100	2,100	18,900	800
Benzol production‡	9,700	9,800	87,000	8,800
Total motor fuel produced	1,422,600	1,443,700	11,686,300	1,176,300
Daily average	47,420	46,570	42,650	39,210
*Includes natural gasoline blended at refineries	112,400	121,600	1,008,800	103,960
†Includes natural gasoline run through refinery pipe lines in California	5,400	6,200	64,000	8,500

‡Estimated with production of by-product coke as a basis.
Prepared under supervision of G. R. Hopkins, Petroleum Economics Division, E. B. Swanson, Acting Chief Economist.

Dirigibles Now Use By-Product Obtained In Natural Gasoline

Should the use of dirigibles become general for air travel, natural gasoline manufacturers may add another product to their list. This development was brought very close to realization during the time the Graf Zeppelin was preparing for its return trip to Germany. Ethane gas, a by-product of the natural gasoline industry now, is the basic fuel in Blau gas, the distinct advantage in the use of this fuel being that as it is consumed the buoyancy of the helium or hydrogen remains unchanged, since the specific gravity of the gas is near that of air.

When liquid fuels are used, the dirigible gradually becomes lighter, and to equalize this the general practice has been to let a part of the hydrogen or helium gas escape into the air. Then as the dirigible was refueled, helium or hydrogen had to be added. This is a costly operation. Another feature of the Graf Zeppelin of interest to the oil industry is the manner of maintaining buoyancy as natural losses occur in the hydrogen and helium.

Ordinarily an airship carries a great deal of water ballast, which can be dropped if buoyancy is lost during flight. The Graf Zeppelin carries a quantity of gasoline (8 tons) instead. As soon as it becomes necessary to lighten the ship, the engines are switched to burn gasoline.

Blau gas is an industrial gas which has been used in Germany for railway coach lighting, for harbor buoys, etc. Gas oil (a petroleum fraction) is used as a base in the manufacture of this gas. The oil is subjected to moderately high temperatures in retorts and is thus cracked, and the gas produced is then scrubbed and washed. The gas is then cooled, and when it is to be used for industrial purposes it is compressed to the liquid state and placed in steel bottles. It contains a large proportion of unsaturated hydrocarbons, which makes it particularly suitable for use in internal combustion en-

(Continued on Page 138)

GASOLINE PLANT TRANSFERS

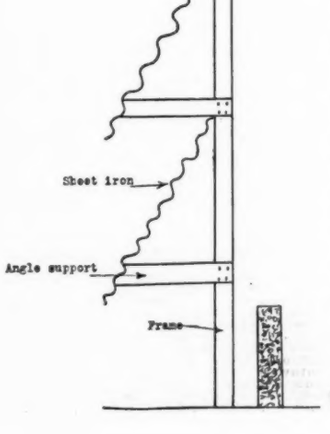
BARTLESVILLE, Okla., Nov. 6.—L. A. Webster, assistant superintendent at the Wichita gasoline plant of the natural gasoline division for the past nine months, has been transferred to the Thrall gasoline plant in Greenwood County, Kansas, as superintendent. He replaces Ira Cunningham, who resigned October 24.

Mr. Webster has been identified with the company for more than eight years, starting as a fireman at the Tallant plant May 14, 1922. He held this position until 1924 when he was promoted to an operator. In September of 1925 he was transferred to the Wellington gasoline plant as one of the operators and later was placed in charge as superintendent. He held this position until the Wellington plant was shut down January 9, 1928, at which time he was temporarily assigned to Wichita. Coincident with this change, Gordon Thomasson, who has been conducting special tests at the Tallant plant, was transferred to Wichita as assistant superintendent.

A Practical Suggestion

COOLING TOWER

One of the most important prerequisites for an efficient gasoline plant is proper cooling. It has not been many years back when submerged coils were used at all absorption plants, and it was not an uncommon experience to have water temperatures as high as 110 degrees Fahrenheit. Considerable progress has been made along this line and temperatures approaching that of the wet bulb are obtained.



Several fabricators have designed efficient and compact cooling towers that are semiportable at least. They are made of redwood and cypress, and even the pit or base vat is made of wood. On a temporary or questionable project they are highly suitable because of the high salvage value.

Often time or expense will not permit the use of a factory fabricated cooling tower, and the following described one has been found to give very satisfactory service. The tower is essentially made of corrugated sheet iron, with the strips laid horizontal. The frame of the tower is made of either 2 by 4-inch or 2 by 6-inch lumber, set on the inside of the concrete pit. The sheet iron is hung by nails to the frame, allowing an overlap of about 4 inches; it is held at an angle by blocks nailed to frame.

Practical suggestions by those connected with the construction and operation of natural gasoline plants are invited. Payment will be made as soon as suggestions are accepted. Address all communications to the Natural Gasoline Department, The Oil and Gas Journal, Tulsa.

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

GASOLINE AND NAPHTHA

	Nov. 6		Oct. 30		Oct. 23	
OKLAHOMA (Group 3)—						
50-52 450 endpoint	.08¾		.08¾	.09	.08¾	.09
56-58 450 endpoint	.08¾	.09	.08¾	.09	.08¾	.09
58-60 450 endpoint	.08¾	.09	.08⅞	.09⅛	.09	.09¼
*58-60 437 endpoint (U. S. Motor)	.09568		.09568		.09720	
*60-62 437 endpoint	.09900		.09900		.10125	
*60-62 400 endpoint	.10250		.10250		.10180	
*64-66 375 endpoint	.11000		.11000		.10830	
68-70 360 endpoint	.10¼	.10½	.10¼	.10½	.10½	
64-66 437 endpoint (blend)	.09¼	.09½	.09¼	.09½	.09½	.09¾

*Weighted average prices November 5 as reported by representative refiners.

Sales to jobbers only.

NORTH TEXAS—						
56-58 450 endpoint	.08¾		.08¾		.08¾	
58-60 450 endpoint	.08¾		.08¾		.08¾	.09
58-60 437 endpoint (U. S. Motor)	.09	.09¼	.09	.09¼	.09¼	.09½
60-62 400 endpoint	.09¼	.09½	.09¼	.09½	.09½	.09⅝
64-66 390 endpoint	.09¾		.09¾		.09⅝	.09¾
64-66 375 endpoint	.09⅞		.09⅞		.10	.10¼
68-70 360 endpoint	.10		.10		.10¼	.10⅝
64-66 437 endpoint (blend)	.09¼		.09¼		.09½	.09⅝
NORTH LOUISIANA—						
58-60 437 endpoint (U. S. Motor)	.09½		.09½		.09¾	
ARKANSAS—						
58-60 437 endpoint (U. S. Motor)	.09½		.09¼	.09½	.09½	
PENNSYLVANIA—						
52-54 Naphtha	.10¼	.10½	.10¼	.10½	.10¼	.10½
54-56 Naphtha	.10½	.10¾	.10½	.10¾	.10½	.10¾
58-60 Gasoline	.11	.11¼	.11	.11¼	.11	.11¼
60 Gasoline	.11¼	.11⅜	.11¾	.12	.11¾	.12
62 Gasoline	.12⅛	.12¾	.12½	.12¾	.12½	.12¾
64 Gasoline	.12¾	.13	.12¾	.13	.12¾	.13
CALIFORNIA—						
58-60 437 edpoint (U. S. Motor) domestic	.10	.11	.10	.11	.10	.11
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 endpoint (Naphtha)	.08¾		.08¾	.09	.08¾	.09
56-58 450 endpoint	.09		.09		.09	
58-60 437 endpoint (U. S. Motor)	.09¼	.09½	.09¼	.09½	.09¼	.09¼
60-62 400 endpoint	.09¾	.10	.09¾	.10	.09⅞	.10⅛
64-66 375 endpoint	.10¼	.10½	.10½	.10¾	.10½	.10¾
68-70 360 endpoint	.10¾		.10¾	.11	.10¾	.11
64-66 437 endpoint (blend)	.09½		.09⅝	.09¾	.09¾	

NATURAL GASOLINE

	Nov. 6		Oct. 30		Oct. 23	
OKLAHOMA (Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.09⅝	.09¾	.10⅛		.09⅝	.09¾
Grade AA, 80-87.9, 375 e.p., rec. 90%	.09⅝		.10⅛		.09⅝	
Grade B, 76-83.9, 375 e.p., rec. 85%	.09½	.09⅝	.10		.09⅝	
Grade BB, 84-92, 375 e.p., rec. 85%	.09½		.10		.09⅝	
Grade C, 80-90, 375 e.p., rec. 78%	.09½		.09⅞	.10	.09½	
NORTH TEXAS—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.09⅝		.10	.10⅛	.09½	.09¾
Grade AA, 80-87.9, 375 e.p., rec. 90%	.09⅝		.10		.09½	.09⅝
Grade B, 76-83.9, 375 e.p., rec. 85%	.09½		.10		.09½	
Grade BB, 84-92, 375 e.p., rec. 85%	.09½	.09½	.10		.09½	
Grade C, 80-90, 375 e.p., rec. 78%	.09¼		.09¾	.10	.09¼	.09½
NORTH LOUISIANA—						
Grade AA, 80-87, 375 e.p., rec. 90%	.09¾		.10¼		.09¾	.09⅞
Grade BB, 84-92, 375 e.p., rec. 85%	.09⅝	.09¾	.10⅛	.10¼	.09¾	
Grade C, 80-92, 375 e.p., rec. 78%	.09⅝		.10		.09½	.09¾
CALIFORNIA—						
75-78, 375-390 endpoint	.07	.07½	.07	.07½	.07	.07½
CHICAGO DISTRICT (Based on Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.09⅝	.09¾	.10	.10⅛	.09⅝	.09¾
Grade AA, 80-87.9, 375 e.p., rec. 90%	.09⅝		.10		.09⅝	.09¾
Grade B, 76-83.9, 375 e.p., rec. 85%	.09½		.10		.09⅝	
Grade BB, 84-92, 375 e.p., rec. 85%	.09½		.10		.09⅝	
Grade C, 80-90, 375 e.p., rec. 78%	.09½		.10		.09½	.09⅝

BURNING OIL

	Nov. 6		Oct. 30		Oct. 23	
OKLAHOMA (Group 3)—						
41-43 water white Kerosene	.05¾	.06	.05⅞	.06⅛	.06	.06¼
42-44 water white Kerosene	.06	.06¼	.06⅜	.06½	.06½	
NORTH LOUISIANA—						
41-43 prime white Kerosene	.06¾		.06¾	.07	.07¼	
NORTH TEXAS—						
41-43 water white Kerosene	.05⅝	.05¾	.05¾		.05¾	.05⅞
40-42 water white Kerosene	.05½		.05½	.05¾	.05¾	
ARKANSAS—						
41-43 water white Kerosene	.06⅛	.06¼	.06¼	.06⅜	.06¾	
PENNSYLVANIA—						
43 Kerosene prime white	.07¼	.07½	.07¼	.07½	.07½	.07⅝
45 Kerosene water white	.07½	.07⅝	.07¼	.07½	.07¼	.07½
46 Kerosene water white	.07⅝	.07⅞	.07⅝	.07⅞	.07¾	.08
47 Kerosene water white	.08	.08¼	.08	.08¼	.08	.08¼
300 Mineral Seal	.07¼	.07½	.07¼	.07½	.07¼	.07½
CALIFORNIA—						
38-40 water white Kero. (high-burning test)	.06¾	.07¼	.06¾	.07¼	.06¾	.07¼
Engine distillate, 43-44, 445 endpoint	.07½	.08	.07½	.08	.07½	.08
Engine distillate, 42-44, 480 endpoint	.07	.07½	.07	.07½	.07	.07½
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white Kerosene	.05¾	.06	.05⅞	.06⅛	.06	.06¼
42-44 water white Kerosene	.06¼	.06½	.06½		.06½	.06¾

FUEL OILS

	Nov. 6		Oct. 30		Oct. 23	
OKLAHOMA (Group 3)—						
Below 18 Fuel Oil, per bbl.	.52½	.55	.52½	.55	.55	
18-22 Fuel Oil, per bbl.	.55	.60	.55	.60	.55	.60
22-26 Fuel Oil, per bbl.	.57½	.60	.57½	.60	.57½	.60
24-26 Fuel Oil, per bbl.	.60	.65	.60	.65	.60	.65
26-30 Fuel Oil, per bbl.	.65	.70	.65	.70	.65	.70
28-30 Fuel Oil, per bbl.	.77½	.82½	.77½	.82½	.77½	.82½
32-36 Gas Oil (dark)	.02⅝	.02½	.02⅝	.02½	.02⅝	.02½
32-36 Gas Oil (straw distillate)	.02½	.02⅝	.02½	.02⅝	.02½	.02⅝
36-38 Distillate	.03	.03¼	.03	.03¼	.03	.03¼
38-40 Straw Distillate	.03¼	.03½	.03¼	.03½	.03¼	.03½
NORTH TEXAS—						
24-26 Fuel Oil (sellers' cars) per bbl.	.52½	.55	.52½	.55	.52½	.55
32-36 Gas Oil (straw)	.02¼	.02⅜	.02¼	.02⅜	.02¼	.02⅜
38-40 Straw Distillate	.02⅞	.03	.02⅞	.03	.02⅞	.03
NORTH LOUISIANA—						
18-20 Fuel Oil, per bbl.	.70	.80	.70	.80	.75	.80
32-36 Gas Oil	.03	.03¼	.03	.03¼	.03	.03¼
ARKANSAS—						
33-36 Distillate	.03¼	.03½	.03¼	.03½	.03¼	.03⅜
32-36 Gas Oil (straw)	.03		.03		.02¾	.03
16-22 Refinery Fuel Oil, per bbl.	.75	.80	.70	.75	.70	
GULF COAST (South Texas)—						
Gas Oil	.04	.04½	.04	.04½	.04	.04½
Bunker C Fuel, per bbl.	.80	.90	.80	.90	.80	.90
PENNSYLVANIA—						
30-34 Fuel Oil	.04⅛	.04¼	.04⅛	.04¼	.04⅛	.04¼
36-40 Fuel Oil	.04½	.04⅝	.04¼	.04½	.04¼	.04½
CALIFORNIA—						
33-36 Distillate	.03¾	.04	.03¾	.04	.03¾	.04
27-32 Distillate	.03	.03½	.03	.03½	.03	.03½
*15-20 Fuel Oil, Bunker (at tide water)	.85	1.00	.85	1.00	.85	1.00
15-20 Fuel Oil (cargo lots), per bbl.	.75	.85	.75	.85	.75	.85
27 plus Diesel, per bbl.	1.15	1.19	1.15	1.19	1.15	1.19
CHICAGO DISTRICT (Based on Group 3)—						
24-26 Fuel Oil, Group 3, bbl.	.60	.65	.62½	.67½	.62½	.67½
22-26 Fuel Oil, Group 3, bbl.	.60	.65	.60	.65	.60	.65
18-22 (Group 3), per bbl.	.55	.60	.55	.60	.55	.60
16-20 Smackover, per bbl.	.85	.87½	.85	.87½	.85	.87½
32-36 Gas Oil, zero	.02⅝	.02⅞	.02⅝	.02⅞	.02⅝	.02⅞
32-36 Gas Oil (industrial)	.02⅜	.02⅝	.02⅜	.02⅝	.02⅜	.02½
36-38 Distillate	.03⅛	.03⅜	.03⅛	.03⅜	.03⅛	.03¼
38-40 Straw Distillate	.03¼	.03½	.03¼	.03½	.03¼	.03⅜

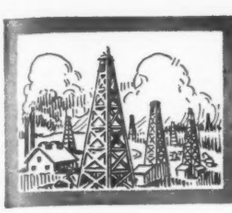
*Bunker.

LUBRICATING OIL AND WAX

	Nov. 6		Oct. 30		Oct. 23	
OKLAHOMA (Group 3)—						
100 vis., 2 color, 20-25 cold test	.06¼	.06½	.06¼	.06½	.06¼	.06½
100 vis., 3 color, 20-25 cold test	.06	.06¼	.06	.06¼	.06	.06¼
150 vis., 3 color, 20-25 cold test	.08¼	.08½	.08¼	.08½	.08¼	.08½
150 vis., 4 color, 20-25 cold test	.08	.08¼	.08	.08¼	.08	.08¼
180 vis., 3 color, 23-28 cold test	.09⅜	.10	.09⅜	.10	.09⅜	.10
180 vis., 4 color, 23-28 cold test	.09¼	.09⅜	.09¼	.09⅜	.09¼	.09⅜
180 vis., 5 color, 23-28 cold test	.09⅛	.09½	.09⅛	.09½	.09⅛	.09½
200 vis., 3 color, 23-28 cold test	.09½		.09½	.10½	.09½	.10½
200 vis., 4 color, 23-28 cold test	.09⅜		.09⅜	.10¼	.09⅜	.10¼
200 vis., 5 color, 23-28 cold test	.09¼		.09¼	.10	.09¼	.10
240 vis., 3 color, 25-30 cold test	.13¾		.13¾	.14	.13¾	.14
240 vis., 4 color, 25-30 cold test	.13¼		.13¼	.13½	.13¼	.13½
240 vis., 5 color, 25-30 cold test	.12¼		.12¼	.12½	.12¼	.12½
280 vis., 3 color, 25-30 cold test	.15½		.15½	.16	.15½	.16
280 vis., 4 color, 25-30 cold test	.15		.15	.15½	.15	.15½
280 vis., 5 color, 25-30 cold test	.14		.14	.14½	.14	.14½
Cylinder Stocks:						
600, steam refined, light green	.08	.09	.08	.09	.08	.09
600, steam refined, dark green	.06	.06½	.06	.06½	.06	.06½
190-200 vis. @ 210 Bright Stock	.29	.30	.29	.30	.29	.30
150-160 vis. @ 210 Bright Stock	.25		.25		.25	
Waxes:						
124-126 White Crude Scale Wax	.05	.05⅛	.05	.05⅛	.05	.05⅛
PENNSYLVANIA—						
34 Neutral	.07½	.07¾	.07½	.07¾	.07½	.07¾
34 Sundebloom	.08¼	.08½	.08¼	.08½	.08¼	.08½
36 Miners' Neutral	.07	.07½	.07	.07½	.07	.07½
150, 3 color	.21	.21½	.21½	.22	.21½	.22
180, 3 color	.25	.25½	.25½	.26	.25½	.26
200, 3 color	.28	.28½	.28½	.29	.28½	.29
220, 3 color	.30½	.31	.31½	.32	.31½	.32
600, steam refined	.14	.14½	.14	.14½	.13¾	.14
635, steam refined	.15½	.16	.15½	.16	.14½	.14¾
650, steam refined	.17½	.18½	.17½	.18½	.15¼	.15½
600, Pennsylvania flash	.21½	.22	.21½	.22	.19	.19½
*550, E filtered	.15	.15½	.15	.15½	.15	.15½
*600, E filtered			.19	.19½	.19	.19½
600, E filtered	.18	.18½	.17	.17½	.18	.18½
600, D filtered	.24½	.25	.23¾	.24	.23¾	.24
550, E filtered	.15½	.16	.15½	.16	.15½	.16
550, D filtered	.21½	.22	.21½	.22	.21½	.22
Pennsylvania Bright Stock	.33	.33½	.33	.34	.35½	.36
†122-124 White Crude Scale Wax	.05¼	.05⅜	.05¼	.05⅜	.05¼	.05⅜
†124-126 White Crude Scale Wax	.05⅜	.05½	.05⅜	.05½	.05⅜	.05½

*At Warren, Pa. †At New York.

GULF COAST (South Texas)—						
No. 2 color, 100 vis., pale oil	.06½	.07	.07¼	.07½	.07¼	.07½
No. 3 color, 200 vis., pale oil	.08½	.09	.08½	.09	.08½	.09
No. 3 color, 300 vis., pale oil	.11	.11½	.11	.11½	.11	.11½
No. 3½ color, 500 vis., pale oil	.12½	.13	.12½	.13	.12½	.13
No. 4 color, 750 vis., pale oil	.15	.15½	.15	.15½	.15	.15½
No. 5 to 6 color, 200 vis., red oil	.08¼	.08½	.08¼	.08½	.08¼	.08½
No. 5 to 6 color, 300 vis., red oil	.09¼	.09½	.09¼	.09½	.09¼	.09½
No. 5 to 6 color, 500 vis., red oil	.10½	.11½	.10½	.11½	.10½	.11½
No. 5 to 6 color, 750 vis., red oil	.13¼	.14	.13¼	.14	.13¼	.14
No. 2½ color, 200 vis., pale filtered	.11¾	.12¼	.11¾	.12¼	.11¾	.12¼
No. 2½ color, 300 vis., pale filtered	.13½		.13½		.13½	
No. 2½ color, 500 vis., pale filtered	.15½	.16	.15½	.16	.15½	.16
No. 2½-3 color, 750 vis., pale filtered	.18	.20	.18	.20	.18	.20
CALIFORNIA—						
130 vis., 2½-3 color	.10¼	.11	.10¼	.11	.10¼	.11
200 vis., 2½-3 color	.11½	.12	.11½	.12	.11½	.12
300 vis., 3-3½ color	.13	.13½	.13	.13½	.13	.13½
350 vis., 3½-4 color	.13½	.14	.13½	.14	.13¼	.14
400 vis., 3½-4 color	.15	.16	.15	.16	.15	.16
Red Neutral:						
200 vis., 4½-5 color	.11½	.11¾	.11½	.11¾	.11½	.11¾



REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

300 vis., 5-6 color	.11¾	.12½	.11¾	.12½	.11¾	.12½
400 vis., 5-6 color	.13½	.14½	.13½	.14½	.13½	.14½
500 vis., 4½-5 color	.15	.15½	.15	.15½	.15	.15½
500 vis., 5-6½ color	.15¼	.15¾	.15¼	.15¾	.15¼	.15¾
600 vis., 6½ plus color	.15½	.16	.15½	.16	.15½	.16

Note: Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES

	Nov. 6	Oct. 30	Oct. 23
Gasoline, U. S. Motor, 58-60 437	.11	.11¼	.11¼
Kerosene, water white, 41-43	.09	.09	.09
*Fuel Oil, Bunker "C," 14-16, per bbl.	1.05	1.05	1.05
†Fuel Oil, Diesel, 28-30, per bbl.	2.00	2.00	2.00
Gas Oil, 32-36 gravity	.05¼	.05¼	.05¼
25 pale Paraffin Oil	.11¾	.11¾	.11¾
28 pale Paraffin Oil	.07½	.07	.07
285 red Paraffin Oil	.11½	.11½	.11½
250 red Paraffin Oil	.11	.10½	.10½
225 red Paraffin Oil	.09½	.09½	.09½
200 red Paraffin Oil	.09	.09	.09
Refined Wax:			
120-122 a.m.p., per lb.	.05⅝	.05⅝	.05½
125-127 a.m.p., per lb.	.05⅞	.05¾	.05¾
130-132 a.m.p., per lb.	.06⅛	.06⅛	.06½
133-135 a.m.p., per lb.	.07⅜	.07⅜	.07¼
135-137 a.m.p., per lb.	.07¾	.07¾	.07¾
Petrolatum, in bbls., carload lots, per lb.:			
Dark green	.02	.02	.02
Amber	.03½	.03½	.03½
Extra amber	.03¾	.03¾	.03¾
Cream	.06¼	.06¼	.06¼
Lily white	.07¼	.07¼	.07¼
Snow white	.08¼	.08¼	.08¼

*Lighterage, 5.0c a barrel extra. †Lighterage, 6.5c a barrel extra.

NEW YORK (BAYONNE) EXPORT PRICES

	Nov. 6	Oct. 30	Oct. 23
Gasoline, U. S. Motor, 58-60 437, in cases	.2640	.2640	.2640
Kerosene, standard white, in cases	.1765	.1765	.1765
Kerosene, water white, in cases	.1890	.1890	.1890
600, steam refined cylinder stocks, in bbls.	.21	.20	.20
635, steam refined	.22	.21	.21
650, steam refined	.24	.23	.23
600, Pennsylvania flash	.26	.26	.26
630, Pennsylvania flash	.34½	.34½	.34½
600, Warren E	.25½	.25½	.25½
600, Oil City E	.24½	.24½	.24½
Light 140-150 Bright Stocks	.40	.42½	.43½
Dark 140-150 Bright Stock	.39	.40½	.41½

LOS ANGELES EXPORT PRICES

	Nov. 6	Oct. 30	Oct. 23
Kerosene, water white		.05¼ .06¼	.05¼ .06¼
U. S. Motor Gasoline, 53-55, 437 e.p.		.08¼ .09	.08½ .09

CALIFORNIA CRUDE OIL PRICES

Standard Oil Co.-Union Oil Co. (Effective August 15, 1928)*

Gravity—	Richfield, Torrance, Olinda-Brea, Alamitos Hts., Signal Hill, Seal Beach, Huntington Beach, Athens, Rosecrans-Dom'guez, Inglewood — 1	Whittier, La Habra, Coyote Hills — 2	†Kern River, Newhall-McKittrick, Midway-Sunset, Elk Hills, Lost Hills, Buena Vista Hills — 3	‡Montebello — 4	§Santa Fe Springs — 5	¶Coalinga — 6	Wheeler Ridge — 7	¶Orcutt — 8	Ventura — 9
14 to 14.9	.85	.85	.75	.85	....	.75	.75	.85	.85
15 to 15.9	.85	.85	.75	.85	....	.75	.75	.85	.85
16 to 16.9	.85	.85	.75	.85	....	.75	.75	.85	.85
17 to 17.9	.85	.85	.75	.85	....	.75	.75	.85	.85
18 to 18.9	.85	.85	.75	.85	....	.75	.75	.85	.85
19 to 19.9	.85	.85	.75	.85	....	.75	.75	.85	.85
20 to 20.9	.85	.85	.77	.86	....	.77	.77	.85	.85
21 to 21.9	.89	.88	.79	.89	.89	.79	.79	.86	.86
22 to 22.9	.92	.91	.82	.92	.92	.82	.82	.87	.87
23 to 23.9	.97	.94	.86	.95	.95	.85	.85	.90	.90
24 to 24.9	1.01	.97	.90	.98	.98	.88	.88	.93	.94
25 to 25.9	1.05	1.00	.95	1.01	1.01	.91	.91	.95	.98
26 to 26.9	1.09	1.04	1.00	1.04	1.04	.94	.94	.97	1.02
27 to 27.9	1.13	1.08	1.05	1.07	1.07	.98	.97	....	1.06
28 to 28.9	1.17	1.12	1.10	1.10	1.10	1.02	....	....	1.10
29 to 29.9	1.21	1.16	1.16	1.13	1.15	1.06	....	....	1.14
30 to 30.9	1.25	1.20	1.22	1.16	1.20	1.10	....	....	1.18
31 to 31.9	1.30	....	1.28	....	1.25	1.14	....	....	1.23
32 to 32.9	1.35	....	1.34	....	1.30	1.18	....	....	1.28
33 to 33.9	1.41	....	1.40	....	1.35	1.22	....	....	....
34 to 34.9	1.47	....	1.46	....	1.40	1.26	....	....	....
35 to 35.9	1.53	....	....	....	1.45	1.30	....	....	....
36 to 36.9	1.59	....	....	....	1.50	....	....	....	....
37 to 37.9	1.65	....	....	....	1.55	....	....	....	....
38 to 38.9	1.71	....	....	....	1.60	....	....	....	....
39 to 39.9	1.77	....	....	....	1.65	....	....	....	....
40 to 40.9	1.83	....	....	....	....	....	....	....	....
41 to 41.9	1.89	....	....	....	....	....	....	....	....
42 to 42.9	1.95	....	....	....	....	....	....	....	....

*Column 1—Signal Hill, Seal Beach, Huntington Beach and Alamitos Heights crude, 14 to 32.9 gravity, inclusive; Richfield, Olinda-Brea and Fullerton, 14 to 30.9 gravity; Torrance and Inglewood, 14 to 28.9 gravity. Dominguez and Athens-Rosecrans, 24 to 42.9 gravity.

Column 2—Whittier crude, 14 to 22.9 gravity; Coyote Hills, 14 to 30.9 gravity.

Column 3—Kern River, Newhall and McKittrick, 14 to 19.9 gravity; Midway-Sunset, Buena Vista and Elk Hills, 14 to 33.9 gravity; Lost Hills, 14 to 34.9 gravity.

Columns 8 and 9 posted by Union Oil Co. only.

†On October 2 Standard Oil Co. of California discontinued contracting for purchase of Kern River crude and on October 20 established following prices on grades below 14 gravity—11 to 11.9 degrees at 45 cents, 12 to 19 degrees at 50 cents.

CRUDE OIL GRAVITY TABLE

Gravity—	Okla., Kans., N. C. Tex. — 1	No. La. and Arkansas — 2	Smackover, Ark. — 3	Stephens, Ark. — 4	Gray County (Texas Panhandle) — 5	Salt Creek, Wyo. — 6	Grade B & Light Crude (S. Coast) — 7	Somerset (South Central Texas) — 8
24 and above	....	....	.90	....	....	....	....	....
Below 24	....	....	.75	....	....	....	....	....
Below 25	.60	....	....	....	....	....	1.16	....
25 to 25.9	.67	....	....	....	....	....	....	....
Below 26	....	....	....	....	....	....	....	....
26 to 26.9	.74	....	....	....	....	....	1.19	....
27 to 27.9	.81	....	....	....	....	....	1.21	....
Below 28	....	.81	....	.75	.68	....	....	....
28 to 28.9	.88	.88	....	.77	.68	....	1.23	....
29 to 29.9	.95	.95	....	.79	.75	.96	1.25	....
30 to 30.9	1.02	1.02	....	.81	.82	1.02	1.27	....
31 to 31.9	1.09	1.09	....	.83	.89	1.09	1.29	....
32 to 32.9	1.16	1.16	....	.85	.96	1.16	1.31	1.05
33 to 33.9	1.21	1.21	....	....	1.01	1.21	1.33	1.07
34 to 34.9	1.26	1.26	....	....	1.06	1.26	1.35	1.09
35 to 35.9	1.31	1.31	....	....	1.11	1.31	1.37	1.11
36 to 36.9	1.36	1.36	....	....	1.16	1.36	....	1.13
37 to 37.9	1.41	1.41	....	....	1.21	1.41	....	1.15
38 to 38.9	1.46	1.46	....	....	1.26	....	....	1.17
39 to 39.9	1.51	1.51	....	....	1.31	....	....	....
40 to 40.9	1.56	1.56	....	....	1.36	....	....	....
41 to 41.9	1.61	1.61	....	....	1.41	....	....	....
42 to 42.9	1.66	1.66	....	....	1.46	....	....	....
43 to 43.9	1.71	1.71	....	....	1.51	....	....	....
44 and above	1.76	1.76	....	....	1.56	....	....	....

Column 1—Magnolia Petroleum Co. posted schedule August 2, 1928, making price below 25 gravity 60 cents per barrel, 25-25.9 gravity 67 cents, 26-26.9 gravity 74 cents, and 27-27.9 gravity 75 cents, 30-30.9, 90 cents, and 31-31.9, $1.05, with balance of the price schedule as shown.

Oklahoma—Prairie Oil & Gas Co., Sinclair Oil & Gas Co., Gypsy Oil Co., Carter Oil Co., The Texas Company, July 26.

North Central Texas—[Including Ranger, Mexia, Powell, Richland, Wortham, Lytton Springs (Southwest Texas, Iatan and Panola (Iatan posted at flat price of 93 cents by Magnolia on January 14, 1928).] Currie, Nocona and Moran. Prairie, Sinclair and Gulf; The Texas Company, Humble Oil & Refining Co., July 26.

Kansas—Prairie, Sinclair; Carter, The Texas Company, July 26.

Column 2—Arkansas and North Louisiana—[Caddo, Bull Bayou, Crichton, De Soto, Haynesville, Homer and El Dorado only], Standard Oil Co. of Louisiana, Louisiana Oil Refining Co., and Gulf Refining Co., August 2. Magnolia Petroleum Co. schedule effective August 7 applies to Pine Island, Haynesville, Bull Bayou, Louisiana, and El Dorado, Ark., light crude. The Texas Company August 8 posted prices below 28 gravity at 7 cents differential per degree with minimum of 60 cents for all below 25 gravity.

Column 3—February 6, Louisiana Oil Refining Co. February 7, Standard Oil Co. of Louisiana, The Texas Company, Gulf Refining Co., Magnolia Petroleum Co. February 3, and on February 10, Atlantic Production Co.

Column 4—Atlantic Oil Producing Co., Louisiana Oil Refining Corp., August 3.

Column 5—Humble Oil & Refining Co., July 26.

Column 6—Midwest Refining Co., July 26. All crude over 37 gravity, $1.41 per barrel.

Column 7—Humble Oil & Refining Co. and other major buyers (schedule ends 35 and above), March 14, with exception of Magnolia Petroleum Co., which stops at 31 degrees gravity. Sun Pipe Line Co. and The Texas Company posted 2 cents differential for each degree above 35 gravity and $1.47 for 40 gravity and above.

Column 8—Grayburg Pipe Line Co. and Pioneer Oil & Refining Co., April 7.

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

Corsicana heavy (March 14, 1927)*....$1.00
Other fields.....See gravity table

*Posted by Magnolia Petroleum Co.

TEXAS PANHANDLE
Carson and Hutchinson

Below 32 gravity	$ .69
32-32.9	.76
33-33.9	.81
34-34.9	.86
35-35.9	.91
36-36.9	.96
37-37.9	1.01
38-38.9	1.06
39-39.9	1.11
40-40.9	1.16
41-41.9	1.21
42-42.9	1.26
43-43.9	1.31
44 and above	1.36

Wheeler County

Below 30 gravity	$ .65
30-30.9	.72
31-31.9	.79
32-32.9	.86
33-33.9	.91
34-34.9	.96
35-35.9	1.01
36-36.9	1.06
37-37.9	1.11
38-38.9	1.16
39-39.9	1.21
40-40.9	1.26
41-41.9	1.31
42-42.9	1.36
43-43.9	1.41
44 and above	1.46
Gray County	See gravity table

Humble Oil & Refining Co. and Magnolia Petroleum Co., July 26.

Iatan*	Same as North Texas
Crane-Upton-Crockett, Pecos, Winkler and Glasscock (July 26)‡	$ .65
Chalk†	.80

*Includes Howard County and Westbrook Fields, Marland Refining Co. pays $1.05 for Howard County crude, effective May 21.
†Magnolia Petroleum Co., January 14, 1928.
‡Posted by Humble Oil & Refining Co., Magnolia Petroleum Co. and Gulf Pipe Line Co.

ARKANSAS-NORTH LOUISIANA

Cotton Valley (Below 36 gravity April 11) .....$ .75
Bellevue (Feb. 27, 1927) 1.25
Urania (Oct. 16, 1928) ..... .90
East El Dorado (March 16, 1927) 1.00
Other fields.....See gravity table

*Cotton Valley crude above 36 gravity takes same gravity price schedule as shown for North Louisiana and Arkansas crude in Mid-Continent gravity price table.

Note—Cotton Valley and Bellevue, Standard Oil Co. of Louisiana, Louisiana Oil Refining Co., Gulf Refining Co. and Magnolia Petroleum Co.; (Magnolia Petroleum Co. posted Cotton Valley February 8); Urania, Louisiana Oil Refining Corp.; East El Dorado, Magnolia Petroleum Co., Gulf Refining Co.

GULF COAST

(Goose Creek, Hull, Liberty, West Columbia, Orange, Boling, Sour Lake, Humble, Sugarland, Raccoon Bend, High Island, Pierce Junction and Spindletop.)

Grade A (March 14)*	$1.20
Grade B	See gravity table
Jennings, La. (March 14)†	$1.06
Saratoga, Batson, Daytona (March 14, 1927)‡	1.20
Markham (March 14)§	1.00

*Humble Oil & Refining Co. and other major buyers. †Gulf Pipe Line Co. ‡Sun Pipe Line Co. §The Texas Company.

SOUTH CENTRAL AND SOUTHWESTERN TEXAS

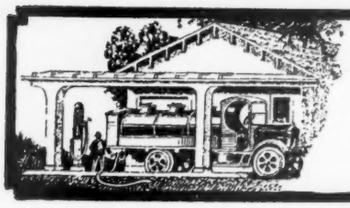
Luling (May 5)*	$1.00
Mirando (March 14)†	1.00
Rockdale-Minerva (April 15):	
Below 38 gravity	1.25
38-38.9 gravity	1.27
39-39.9 gravity	1.29
40 and above	1.31
Thrall‡	
Callihan (May 15)	1.75
Lytton Springs (Lockhart)	See gravity table
Somerset	See gravity table

*Posted by Magnolia Petroleum. Thrall prices same as North Central Texas less 19½ cents per cwt. freight.
†Magnolia Petroleum Co., Humble Oil & Refining Co., Crown Central Pipe Line Co.

ROCKY MOUNTAIN STATES
Ohio Oil Co.-Midwest Refining Co.
(Effective July 27, 1928)

Rock Creek, Wyo	$1.33
Salt Creek	See gravity table

(Continued on Page 130)



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns Nov. 6.

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Chicago dist.	15.0	17.0	...	12.0
Decatur, Ill.	15.2	17.2	...	12.1
East St. Louis	14.4	16.4	...	11.2
Joliet	15.4	17.4	...	12.3
Peoria	15.2	17.2	...	12.1
Quincy	15.2	17.2	...	11.9
Davenport, Ia.	18.5	20.5	3.0	12.3
Des Moines	18.5	20.5	3.0	12.3
Keokuk	18.5	20.5	3.0	12.3
Sioux City	18.1	20.1	3.0	11.9
Duluth, Minn.	18.5	20.5	2.0	12.9
Mankato	18.1	20.1	2.0	12.7
Minneapolis	18.2	20.2	2.0	12.9
La Crosse, Wis.	18.2	20.2	2.0	13.0
Milwaukee	17.1	19.1	3.0	11.9
Madison	17.3	17.3	2.0	12.1
Detroit, Mich.	18.8	20.8	3.0	13.7
Grand Rapids	18.7	20.7	3.0	13.6
Saginaw	18.9	20.9	3.0	13.8
Evansville, Ind.	18.0	20.0	3.0	13.0
Fort Wayne	18.4	20.4	3.0	13.4
Indianapolis	18.2	20.2	3.0	13.2
South Bend	18.4	20.4	3.0	13.4
Fargo, N. D.	19.9	21.9	2.0	14.9
Huron, S. D.	20.3	22.3	4.0	13.7
Sioux Falls	19.1	21.1	4.0	13.4
K. C., Mo.*	17.9	19.9	3.0	10.6
Springfield*	17.8	19.8	3.0	11.5
St. Louis*	16.9	18.9	2.5	11.3
St. Joseph*	17.5	19.5	3.0	11.2
Wichita, Kans.	15.8	17.8	2.0	10.8
Bartlesville, Ok.	16.5	18.5	3.0	10.5

*State tax 2 cents; remainder city tax.

NAPHTHA

	Tank wagon	Tank car
Oleum spirits	14.7	12.9
V. M. & P. naphtha	16.2	13.9
Cleaner's naphtha	18.0	14.9
Stanisol	19.0	15.4

Tank wagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

STANOLIND FURNACE OIL IN CHICAGO

Less than 100 gallons	9.0
100 to 799 gallons	8.0
800 or more gallons	7.5

Note—Outside Chicago furnace oil discount of 1 cent per gallon is given on deliveries of 100 to 349 gallons and 1½ cents on deliveries of 350 gallons or more.

The following quantity discounts from the service station price are allowed on monthly sales of gasoline; 2,000 gallons or less, 2 cents; more than 2,000 and less than 6,000 gallons,, 2½ cents; more than 6,000 gallons, 3 cents. Discounts are allowed each month, and they are not cumulative. Delivery tickets showing date and quantity delivered must be sent to the seller before the tenth of the month to secure the discount on the previous month's purchases.

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Dallas, Tex.	16.0	20.0	2.0	12.0
Fort Worth	16.0	19.0	2.0	12.0
Houston	16.0	20.0	2.0	15.0
San Antonio	14.0	17.0	2.0	11.0
El Paso	17.0	20.0	2.0	16.0
Texarkana	16.5	20.5	3.0	13.0
Muskogee, Ok.	18.0	20.0	3.0	12.0
Okla. City	18.0	20.0	3.0	12.0
Tulsa	17.0	19.0	3.0	10.0
Ft. Smith, Ark.	18.0	20.0	3.0	14.0
Little Rock	21.0	23.0	5.0	14.0

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Omaha	17.25	19.25	2.0	12.25
McCook	18.75	20.75	2.0	13.75
Norfolk	17.75	19.75	2.0	12.75
N. Platte	18.75	20.50	2.0	13.50
Scotsbluff	18.75	20.75	2.0	13.25

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Denver, Colo.	19.0	22.0	3.0	14.5
Pueblo	19.0	22.0	3.0	14.5
Grand Junction	22.5	25.5	3.0	18.0
Casper, Wyo.	19.0	22.0	3.0	13.0
Cheyenne	20.0	23.0	3.0	14.5
Butte, Mont.	23.5	26.5	3.0	19.0
Helena	23.5	26.5	3.0	19.0
Salt Lake, Utah	22.0	25.0	3.5	17.0
Albu'que, N. M.	22.0	25.0	5.0	17.0
Boise, Idaho	24.5	27.5	4.0	19.0
Twin Falls	24.5	27.5	4.0	19.0

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atlanta, Ga.	22.0	24.0	4.0	16.5
Augusta	22.0	24.0	4.0	15.5
Macon	22.0	24.0	4.0	16.5
Savannah	21.0	21.0	4.0	14.5
Birm'ham, Ala.	20.0	22.0	4.0	14.0
Mobile	22.0	24.0	4.0	15.0
Montgomery	21.0	22.0	4.0	16.5
Clarks'le, Miss.	21.0	23.0	4.0	13.0
Jackson	19.0	21.0	4.0	14.5
Natchez	20.5	22.5	4.0	14.0
Gulfport	22.5	24.5	4.0	14.0
Vicksburg	20.5	22.5	4.0	14.0
Jack'ville, Fla.*	22.0	24.0	5.0	13.5
Miami*	23.0	25.0	5.0	15.5
Pensacola*	24.0	24.0	5.0	13.5
Tampa*	22.0	24.0	5.0	13.5
Lexington, Ky.	21.0	23.0	5.0	15.5
Covington	22.0	22.0	5.0	15.5
Louisville	21.0	23.0	5.0	15.0

*Note—Florida station prices have been 2 cents above tank wagon prices in respective points since July 30 as shown above.

In addition to the state tax of 4 cents on gasoline, Montgomery has city tax of 1 cent on gasoline. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene only. Pensacola tax includes 1-cent city levy. Gulf port tax includes privilege tax of 2 cents in addition to state tax.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atlantic City	18.0	20.0	2.0	14.0
Newark, N. J.	18.0	20.0	2.0	14.0
Annapolis, Md.	21.0	23.0	4.0	14.0
Baltimore	21.0	23.0	4.0	11.0
Cumberland	21.0	23.0	4.0	14.0
Washington	19.0	21.0	2.0	14.0
Danville, Va.	22.0	....	5.0	14.0
Norfolk	19.0	20.0	5.0	14.0
Petersburg	22.0	24.0	5.0	14.0
Roanoke	22.0	24.0	5.0	14.0
Richmond	22.0	24.0	5.0	14.0
Ch'rist'n, W. V.	21.0	23.0	4.0	14.0
Keyser	21.0	23.0	4.0	14.0
Parkersburg	21.0	23.0	4.0	14.0
Wheeling	21.0	23.0	4.0	14.0
Charlotte, N. C.	21.0	23.0	4.0	14.0
Hickory	21.0	23.0	4.0	14.0
Mt. Airy	21.0	23.0	4.0	14.0
Salisbury	21.0	23.0	4.0	14.0
Charleston, S. C.	22.0	24.0	5.0	14.0
Columbia	22.0	24.0	5.0	14.0

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Albany, N. Y.	18.0	20.0	...	15.0
New York*	18.0	20.0	...	15.0
Buffalo	18.0	20.0	...	14.0
Rochester	18.0	20.0	...	14.0
Syracuse	18.0	20.0	...	15.0
Boston, Mass	18.0	20.0	...	15.0
Augusta, Me.	22.0	24.0	4.0	15.0
Manch't'r, N. H.	22.0	24.0	4.0	15.0
Burlington, Vt.	21.0	23.0	3.0	15.0

*Prices in steel barrels.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
N. Orleans, La.*	15.5	17.5	3.0	16.0
Baton Rouge	16.0	18.0	3.0	14.5
Alexandria	17.0	19.0	3.0	16.0
LaFayette	17.0	19.0	3.0	15.5
Lake Charles	17.5	19.5	3.0	16.0
Shreveport	17.5	19.5	3.0	15.0
Knoxv'le, Tenn.	21.0	21.0	3.0	16.0
Memphis	19.0	21.0	3.0	15.0
Chattanooga	20.5	22.5	3.0	16.0
Nashville	20.0	22.0	3.0	16.0
Bristol	21.0	23.0	3.0	15.0
Lit. Rock, Ark.	21.0	23.0	5.0	14.0

*Tax of 3 cents includes city tax of 1 cent. Louisiana kerosene prices include 1-cent state tax and 1-cent parish tax.

PACIFIC COAST TERRITORY

Standard Oil Co. (California)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
San Francisco	17.0	21.0	3.0	15.5
Los Angeles	16.5	20.5	3.0	15.5
Reno, Nev.	22.0	26.0	4.0	19.0
Portland, Ore.	17.5	21.5	3.0	16.5
Seattle, Wash.	16.5	20.5	2.0	16.5
Tacoma	16.5	20.5	2.0	16.5
Spokane	20.5	24.5	2.0	20.5
Phoenix, Ariz.	18.0	22.0	4.0	20.5

PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND

The Atlantic Refining Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Pittsburgh, Pa.	17.0	*22.0	...	15.0
Philadelphia	17.0	*22.0	...	15.0
Scranton	17.0	*22.0	...	15.0
Allentown	17.0	*22.0	...	15.0
Altoona	17.0	*22.0	...	15.0
Erie	17.0	*22.0	...	15.0
Dover, Del.	20.0	22.0	3.0	15.0
Wilmington	20.0	22.0	3.0	15.0
Springf'd, Mass.	18.0	20.0	...	15.0
Worcester	18.0	20.0	...	15.0
Boston	18.0	20.0	...	15.0
Providence, R. I.	20.0	22.0	2.0	15.0
Hartford, Conn.	20.0	22.0	2.0	14.0
New Haven	20.0	22.0	2.0	15.0

*Includes tax of 3.0 cents. Pennsylvania tax is collected by the dealer and paid by him direct to the State.

OHIO

Standard Oil Co. (Ohio)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
All Ohio points.	19.0	20.0	3.0	14.5

TANK WAGON CHANGES

November 2—Standard Oil Co. of Louisiana advanced the gasoline station price 2 cents in Shreveport, La. to 19.5 cents.

MID-CONTINENT DIVISION OF ENGINEERS TO MEET

The first annual meeting of the Mid-Continent Division of Development and Production Engineering of the American Petroleum Institute will be held in Tulsa at the Mayo Hotel November 16. The object of the division is to collect, discuss and distribute ideas and methods, both of a practical and technical nature, that may lead to better ways of developing, drilling and producing oil in the Mid-Continent Field.

The constantly deeper drilling of wells with the attendant difficulties of producing from these deep sands, the conservation of gas in the production of oil, and the standardization of equipment and material have all led to many difficult problems, and it is felt that through the meetings of this division, an approach to the solution of these problems can be had.

Program

9:00 a.m. Presiding: C. D. Watson.

Introduction of C. A. Young, national secretary of A.P.I., Division of Development and Production Engineering.

"Crooked Holes, Some Causes and Effects," Mid-Continent Committee on Drilling Practice, E. J. McKee, chairman.

"Inspection and Care of Wire Lines," Mid-Continent Subcommittee on Wire Line Practice, Glenver McConnell.

2:00 p.m. Presiding: E. O. Bennett.

"Pumping Wells," Mid-Continent Committee on Production Practice, J. R. McWilliams, chairman.

"Back Pressure, Fluid Levels and Submergence," S. F. Shaw.

7:00 p.m. Banquet, Junior ballroom.

SEMINOLE COMMITTEE CALLED BY COLLINS

A public meeting of the Seminole advisory committee and the operators interested in the Maud area around Township 8-5 has been called by Umpire Ray M. Collins for Wednesday, November 7, at 2 p. m. It is thought this meeting will partially remove the drilling restrictions which have been placed on the Maud area for many months, and that possibly a series of test wells will be drilled under a plan somewhat similar to the plan used in drilling up the South Little River area.

At present there are six producing wells scattered through the township, five of them making their oil from the Hunton, Misener and Simpson sands, and one of them producing from the Wilcox sand. Probably 25 or 30 wells will be drilled as a result of the Wednesday meeting.

GULF COAST MARKET CONTINUES UNCHANGED

HOUSTON, Tex., Nov. 6.—Except for a few small export inquiries and some buying of 100 viscosity pale oils which came in Monday and Tuesday, there is no change in Gulf Coast refinery markets as the week opens. Domestic volume of lubricant business continues just about sufficient to maintain a steady price structure but it apparently is not enough to lead to any immediate stiffening.

The export demand for 100 viscosity pale oil possibly will have no effect on the general market as that product is made by only two refiners. Prices offered for this stock, however, range from 6 to 6½ cents which is slightly above the posted export market but slightly under the domestic quotation. Fuel also continues very weak with virtually the material moving being on contract.

PENNSYLVANIA MARKET

OIL CITY, Pa. Nov. 3.—Gasoline, kerosene and naphtha in the Pennsylvania market are now moving well at the prices quoted. Cylinder stocks are exceptionally strong. Bright stocks are moving fairly well, exceptionally well for this time of the year. Cylinder stocks are also strong. Wax is fairly quiet. Neutrals are plentiful and weak.

CRUDE OIL PRICES

(Continued from Page 129)

Big Muddy	1.32
Grass Creek, heavy	.90
Grass Creek, light	1.40
Mule Creek (May 1)	1.10
Elk Basin	1.40
Lance Creek	1.40
Poison Spider (March 14, 1927)	1.00
Notches (March 14, 1927)	.65
Rex Lake (February 22)	1.10
Osage	1.40
Lost Soldier (contract)	.95
Hamilton Dome (March 14, 1927)	.85
Greybull-Torchlight	1.40
Cat Creek (Montana)	1.40
Sunburst (Montana) (May 18, 1928)	1.65
Artesia	1.08
Hogback (New Mexico)	1.40

Note—Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Refining Co., and the remainder by the Ohio Oil Co. Both companies post Grass Creek light and Elk Basin.

EASTERN STATES

Joseph Seep Purchasing Agent
(Effective October 13, 1928)

Penna Grade Oil in New York Transit Lines (New York)	$3.45
Bradford District Oil in National Transit Lines (Pennsylvania)	3.45
Penna Grade Oil in National Transit Lines (Pennsylvania)	3.35
Penna Crude Oil in Southwest Pennsylvania Lines (West Virginia)	3.35
Penna Grade Oil in Eureka Pipe Line Lines (Pennsylvania)	3.25
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio)	3.10
Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia) (July 13)	1.45
Corning 35-cent Grade Oil in Buckeye Pipe Line Co.'s Lines (August 8)	1.70
Corning 25-cent Grade Oil in Buckeye Pipe Line Co.'s lines (August 8)	1.80
Somerset Oil in Cumberland Pipe Line Lines (Kentucky) (Sept. 14, 1928)	1.75
Ragland Grade Oil in Cumberland Pipe Line Lines (Kentucky) (August 1)	.80

MIDDLE WESTERN STATES

Ohio Oil Co.
(Effective July 27, 1928)

Lima	$1.60
Wooster (October 17)	1.77
Illinois	1.55
Indiana	1.37
Princeton	1.55
Plymouth	1.38
Waterloo (November 17, 1926)	1.35
Western Kentucky* (Sept. 17, 1928)	1.60
Saginaw, Mich., Saginaw Sand (February 10)†	1.80
Saginaw, Mich., Berea Sand (February 10)†	1.70
Cumberland, Clay, Barren, Clinton and Monroe Counties, Kentucky, (March 16)‡	1.50
Oil in lines of Stoll Oil Refining Co. in Oil City, Ky. (Oct. 1, 1928)§	1.75
Oil Springs (Canada)¶	2.07
Petrolia (Canada)¶	2.00

*Posted by Ohio Oil Co.
†Posted by Sun Oil Co.
‡Posted by Paragon Development Co.
§Posted by Stoll Oil Refining Co.
¶Posted by Imperial Oil Co., Ltd.

MEXICAN CRUDE

Panuco heavy (f.o.b. Mexican ports)	$1.15

Note—Due to the fact that the exportation of Tuxpam light crude has become a negligible factor, prices will no longer be published.

Offer motorists **extra** value with **OPALINE**.. the **extra** service

REG. U.S. PAT. OFF.

motor oil ..... WHEN you become an Authorized Opaline Dealer, you get the exclusive Opaline method for recommending motor oil. This method assures a motorist the right grade of *Opaline to seal the power in his pistons*—that's an *extra* service which Opaline does—that's an *extra* service you give your customers—an *extra* reason why they should keep coming back to you for gas and oil. May we tell you about this common-sense method of selling *precision* in lubrication?

SINCLAIR REFINING COMPANY, INC.

Also Makers of Sinclair Gasoline and H-C Gasoline

45 NASSAU STREET, NEW YORK

Atlanta Boston Chicago Houston Kansas City

© 1928 S.R.C.

Oil Securities in Advancing Market

Reach New High Levels for the Year. Barnsdall Rise Feature of Monday's Opening. New Jersey Standard Strong

By Special Correspondent

The oil securities participated in a genuine bull market on Monday of this week when every important issue advanced, many of them to new high levels for this year. The openings were made on spreads in many cases, notably Barnsdall, which opened $4 higher than Saturday's closing.

Standard of New Jersey was noticeable in the strength of the oils on the big board, and it had an exceptionally large volume of trading which carried it through 50.

On the curb, Humble Oil & Refining was in a new high, selling at 95¼.

The strength in the majority of the oil offerings was attributed to the strength of the Mid-Continent crude market, and students of this situation were free to predict an advance in crude prices very soon.

Barnsdall was also strong on account of the completion of the second well on the company's new California property at Elwood Terrace.

Sinclair Consolidated shared in the advance and sold through 43 on the continued reports that that company was soon to be linked with other oil concerns in an important merger.

Independent Oil & Gas

Consolidated income account of Independent Oil & Gas Co. and subsidiaries September 30, 1928, compares as follows:

	†1928	1927
Gross income	$7,240,512	$3,797,067
*Exp., ord. tax., etc.	2,993,379	1,888,061
Operating profit	$4,247,133	$1,909,006
Interest, amort., etc.	261,509	148,144
Depr. and depl.	1,475,780	876,061
Federal taxes	125,000	
Balance	$2,444,844	$884,801
Minority interest	1,010	
Net income	$2,445,854	$884,801

Nine months ended September 30:

	†1928	1927
Gross income	$12,876,428	$9,626,824
*Exp., ord. taxes, etc.	5,970,241	5,236,429
Operatinf profit	$6,906,187	$4,390,395
Interest, amort., etc.	550,372	371,078
Deprec. and depletion	4,092,852	2,145,382
Est. Federal taxes	125,000	30,000
Balance	$2,137,963	$1,843,935
Minority interest	1,010	
Net income	$2,138,973	$1,843,935

*Includes dry holes and surrendered and expired leases. †Includes earning of Manhattan Oil Co. for two months.

Houston Oil

Report of Houston Oil Co. of Texas and Houston Pipe Line Co. for quarter ended September 30, 1928, shows net profit of $372,583 after interest, abandoned leases, depreciation, depletion, Federal taxes, etc., equivalent after allowing for dividend requirements on $8,947,600 6 per cent preferred stock, to 95 cents a share earned on 249,686 shares of common stock. This compares with $388,980 or $1.02 a share on common in preceding quarter and $607,768 or $1.89 a share in third quarter of 1927.

Net profit for nine months ended September 30, 1928, totaled $1,099,426 after above charges, equal to $2.79 a share on common, comparing with $1,945,788 or $6.18 a share in first nine months of previous year.

Consolidated income account of Houston Oil Co. of Texas and Houston Pipe Line Co. for quarter ended September 30, 1928, compares as follows:

	1928	1927
Gross earnings	$2,554,046	$2,698,806
Exp. and ordinary taxes	1,369,095	1,295,569
Operating income	$1,184,951	$1,403,237
Other income	52,048	61,543
Total income	$1,236,999	$1,464,780
Abandoned leases, etc.	145,387	125,893
Int., amort., Fed. taxes	173,232	268,213
Depr. and depletion	545,797	462,906
Net income	$372,583	$607,768

Nine months ended September 30:

	1928	1927
Gross earnings	$6,998,242	$7,636,063
Exp. and ordinary taxes	3,528,999	3,431,334
Operating income	$3,469,243	$4,204,729
Other income	162,846	194,523
Total income	$3,632,089	$4,399,252
Abandoned leases, etc.	414,324	282,909
Int., amort., Fed. taxes	505,419	832,565
Depr. and depl.	1,612,920	1,337,990
Net income	$1,099,426	$1,945,788

Barnsdall Corporation

Barnsdall corporation and subsidiaries report for quarter ended September 30, 1928, net income of $1,398,134 after interest, depreciation, depletion, abandoned dry holes and Federal taxes, equivalent to $1.09 a share (par $25) earned on 1,281,906 combined Class A and Class B shares. This compares with $614,196 or 49 cents a share on 1,251,000 combined shares in preceding quarter and $1,705,809 or $1.48 a share on 1,153,696 combined shares in third quarter of 1927.

For first nine months of 1928, net income totaled $2,401,461 after above charges, equal to $1.87 a share on combined 1,281,906 Class A and Class B shares, against $3,348,492 or $2.90 a share on 1,153,696 combined shares in first nine months of previous year.

Income account for nine months ended September 30, 1928, compares as follows:

	1928	1927
Profit after int. and Federal tax	$6,800,400	$7,184,868
Depr. and depl.	4,398,939	3,836,376
Net income	$2,401,461	$3,348,492
Dividends	731,262	2,142,328
Surplus	$1,670,199	$1,206,164

E. B. Reeser, president, in remarks accompanying the statement, says:

"The current position continues to improve. On September 30 the ratio of current assets to current liabilities was two and one-half times, as compared to 1.35 on January 1, 1928. Through the conversion rights $3,351,500 of debentures have been retired and 129,130 shares of additional stock issued, making the total number of shares outstanding 1,423,969 on October 22.

"The condition of the corporation con-

TWENTY REPRESENTATIVE STOCKS

The Oil and Gas Journal weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange and New York Curb was as follows:

Nov. 5	75.99	Sept. 15	67.06
Oct. 29	75.02	Sept. 8	66.76
Oct. 20	70.05	Sept. 1	65.96
Oct. 13	68.03	Aug. 27	65.79
Oct. 6	57.55	Aug. 20	65.42
Sept. 29	67.93	Aug. 13	65.16
Sept. 22	67.12	Aug. 6	66.16
July 30	64.68		
July 23	64.13		
July 16	64.51		
July 9	65.38		
July 2	64.17		
June 25	62.88		
June 18	62.95		

OIL BONDS ON THE NEW YORK STOCK EXCHANGE

Quotations Compiled by Francis, Bro. & Co., Members New York Stock Exchange
Kennedy Bldg., Tulsa, Okla.

Amount outstanding	Company—	Date	Pct.	Int.	For week ended Nov. 3 Sales	High	Low	Close
.....	Atlantic Refining Co.	July 1937	5	J&J	50,000	101¾	101⅛	101⅛
18,864,500	Barnsdall Oil with war.	Dec. 1940	6	J&D	468,000	137	132	137
6,000,000	Barnsdall Oil without war...	Dec. 1940	6	J&D	976,000	98	94⅛	97⅛
11,400,000	California Pet. conv. deb. ..	Nov. 1938	5½	M&N	39,000	104	103½	103⅝
7,400,000	California Pet. conv. deb. ..	Feb. 1939	5	F&A	13,000	101	100½	101
.....	General Petroleum	Aug. 1940	5	F&A	37,000	101	100⅜	101
25,000,000	Humble O. & R. deb.	July 1932	5½	J&J	26,000	102⅝	101⅜	102
24,239,000	Humble O. & R. deb.	Apr. 1937	5	A&O	102,000	100½	100	100⅛
10,103,000	Mid-Cont. Pet. Corp.	Mar. 1940	6½	M&S	18,000	105¼	105	105¼
3,745,000	Pan-American Pet. & T.	Aug. 1930	7	F&A	4,000	104⅝	104½	104⅝
10,161,900	Pan-American Pet. & T.	Nov. 1934	6	M&N	13,000	105	104⅛	105
40,000,000	Phillips Pet.	June 1939	5¼	J&D	40,000	94	93⅛	93⅜
.....	Pierce Oil deb.	June 1931	8	J&D				
.....	P. & R. Corp.	Dec. 1931	8	J&D				
.....	P. & R. Corp. without war...	June 1931	8	J&D	5,000	110¾	110¾	110¾
20,000,000	Pure Oil	Aug. 1937	5½	F&A	42,000	100	99⅝	99⅝
30,000,000	Shell Pipe Line Co.	Nov. 1952	5	M&N	27,000	96⅝	96	96⅝
50,000,000	Shell Union Oil Co.	May 1947	5	M&N	71,000	98½	98	98⅛
3,431,500	Simms Pet. Co.	Nov. 1929	6	M&N	75,000	101¾	99⅞	100
44,816,500	Sinclair Co. Oil Co. A	Mar. 1937	7	M&S	82,000	103	102⅛	103
23,086,500	Sinclair Co. Oil Co. B	Mar. 1938	6½	J&D	84,000	101½	100½	101⅛
20,000,000	Sinclair Co. Oil Co. D	Sept. 1930	6	M&S	141,000	99⅜	99	99⅛
.....	Sinclair Cr. Oil Pur. Co. A..	Jan. 1938	5½	J&J	95,000	97⅞	97⅛	97⅞
.....	Sinclair Pipe Line Co.	Oct. 1942	5	A&O	132,000	95⅜	94¼	95⅛
15,000,000	Skelly Oil Co.	Mar. 1939	5½	M&S	75,000	94½	93¼	94⅛
.....	Standard Oil of N. J.	Dec. 1946	5	F&A	166,000	103¼	102⅝	102⅝
.....	Standard Oil of N. Y.	Dec. 1951	4½	J&D	123,000	96⅞	96⅛	96⅝
.....	Union Oil of Calif.	Jan. 1931	5	J&J				
8,934,500	Union Oil of Cal. 20 yr. A...	May 1942	6	F&A	15,000	109¼	109¼	109¼
9,419,000	Union Oil of Cal. series C ..	Feb. 1935	5	A&O	5,000	99¼	99	99¼
4,870,000	White Eagle Oil & Ref.	Mar. 1937	5½	M&S	59,000	101¼	100	100

INDEPENDENT OILS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Kennedy Building, Tulsa, Okla.
Members New York Curb Market

1926 High	1926 Low	1927 High	1927 Low	1928 High	1928 Low	Par value	Stocks	Week ended November 3 Sales	First	High	Low	Last	Change
$6.75	.45	2 7/32	.55	1½	.66	$5	Amer. Con. Oilfields	20,800	76	88	76	77	—11
..	..	7½	2¾	6⅝	3½	N.P.	Amer. Maracaibo	4,400	4⅞	5	4⅝	5	+⅛
..	..	2¾	1	4½	2¼	$10	Argo Oil	300	2½	2½	2½	2½	.....
85¼	60	40	20½	49	32⅝	N.P.	British American	1,700	48	50	47½	50	+2
28⅜	9¼	28¼	15½	23⅞	12½	25c	Carib. Syndicate (new)	39,800	15⅝	20¾	16	18	+2¼
..	..	58¾	40¼	72⅛	54	$20	Cities Service	20,800	70¼	71½	70¼	71½	+1
..	..	95⅝	87	103½	94½	100	Cities Service, pfd.	800	99½	99⅞	99½	99¾	—⅛
..	..	8⅞	7⅝	9⅝	8⅞	10	Cities Service, pfd. B	100	9¼	9¼	9¼	9¼	.....
3½	1¾	3⅞	1⅛	2¼	1 3/32	1	Colombia Syndicate	4,100	1 3/32	1¼	1⅛	1⅛	—1/32
..	..	9¾	6⅜	8⅛	6½	10	Consolidated Royal	300	6½	6½	6½	6½	.....
16	10	14⅞	9½	17½	10	N.P.	Creole Syndicate	9,200	13	13	12¼	12½	—⅜
..	..	3	.50	2¾	.76	N.P.	Crown Central	1,000	1¼	1¼	1¼	1¼	—⅛
7⅞	6¾	12	4	30⅛	8⅛	N.P.	Darby Petroleum	9,300	29¾	31	28½	28¾	—1⅜
..	..	2½	.74	2½	1	N.P.	Derby Oil & Refining	1,200	2¼	2⅞	1⅞	2½	+⅝
..	..	16¾	4	15½	7½	N.P.	Derby Oil & Refining, pfd.	7,600	17	21	17	21	+3
..	..	2	.40	.53	.15	N.P.	Gilliland ctfs.	No sales—20@50.					
98	92	118	86¼	148½	101⅛	$25	Gulf Oil Corp.	17,800	134	138½	133⅞	136	+1
$3.00	.83	2½	.80	2¾	1	10	Intercontinental Pet.	21,800	1⅞	2	1¾	1¾	—¼
..	..	2¼	1⅛	3	1¼	N.P.	Kirby Petroleum	3,800	2⅜	2⅝	2	2½	—⅛
12¼	5¾	10⅞	5⅛	9⅜	5⅛	N.P.	Leonard Oil & Dev.	5,200	5⅜	5⅜	5¼	5½	—⅛
27	20	27½	20	33	20	N.P.	Lion Oil & Refining	18,800	40	40⅛	35½	38¼	—1¾
46	30	59⅜	37	59⅞	49	$25	Lone Star Gas	6,800	57	59¾	56	57	—½
2⅞	1	2⅞	.80	1⅞	.50	1	Magdalena Syndicate	13,000	77	80	65	66	—1
34	12½	52	12	45	34½	N.P.	Margay Oil	100	36	36	36	36	+1½
8	5½	12⅛	5	8	4¼	N.P.	Mexico-Ohio Oil	No sales.					
1¾	1⅛	1½	1	1½	.81	$1	Mountain & Gulf	7,000	1¼	1⅜	1	1¼	+⅛
26	23	29¼	22¾	28⅝	21½	10	Mountain Producers	7,200	21⅜	22	21½	22	.....
6⅝	5	5⅞	4⅝	5⅝	4¼	5	New Bradford	1,900	5	5	4½	4⅞	—⅛
..	..	16	9¼	11⅜	7¼	1	New Mex. & Ariz.	200	7⅝	7¾	7⅝	7¾	.....
..	..	12¾	9½	13¼	10⅜	N.P.	North Central Texas	700	10¾	10¾	10⅝	10¾	.....
10⅛	5⅞	9⅜	3¼	6	2¼	N.P.	Pandem	1,600	2½	2⅝	2¼	2⅜	—⅛
12¼	11¾	12½	7	15⅝	8½	N.P.	Pantepec Oil	8,500	11⅞	12¼	11½	12	.....
22¾	12	13½	5⅛	7¾	5⅛	$10	Pennok Oil	100	5¼	5¼	5¼	5¼	—⅛
17	8½	24⅜	7	14½	9	25	Red Bank Oil	No sales—9@12.					
30¼	12	15½	3½	12⅞	4⅛	N.P.	Reiter-Foster	400	8⅞	9	8¼	8⅝	—⅜
7	4½	7	4½	9⅞	4⅝	N.P.	Ryan Consolidated	700	6¼	6¼	6	6	.....
10	7½	8	5¼	7¼	5¾	$10	Salt Creek Cons.	200	5⅞	5⅞	5⅞	5⅞	+⅛
35	24½	35½	27¼	35	23¼	10	Salt Creek Prod.	5,300	24	24¼	23¾	24	—⅜
6⅞	1¾	7	1¼	3½	1	5	Savoy Oil	No sales—1½@1¾.					
27	7⅝	26½	17	22⅞	13	10	Tidal Osage	100	16⅞	16⅞	16⅛	16⅛	—¾
25¾	7⅝	23¾	15	21¼	13⅛	10	Tidal Osage, nonvoting	500	15⅞	16	15⅞	15⅞	+⅛
92	63½	92	63½	87	75	100	Transcontinental, pfd.	400	82¾	83⅛	82½	83⅛	+2⅛
8	4½	7⅝	4¼	8⅛	4⅞	5	Venezuelan Petrol	52,800	8¼	8⅜	7⅜	7¾	—⅝
8⅛	5½	8	4⅜	8¼	4⅞	$1	Woodley Petroleum	400	5⅛	5⅛	5⅛	5⅛	+⅛
6½	6	6	1¾	8⅜	2⅛	25	Y Oil & Gas (new)	400	4⅜	4¾	4⅜	4⅜	—½

*Ex-dividend.

TRANSACTIONS IN OIL SHARES ON NEW YORK STOCK EXCHANGE

Quotations Compiled by Francis, Bro. & Co., Members New York Stock Exchange, Kennedy Building, Tulsa, Okla.

1926 High	1926 Low	1927 High	1927 Low	1928 High	1928 Low	Listed capital	Par value	Stocks	Div. rate	Last paid	Transactions week ended November 3 Sales	Open	High	Low	Last	Change
32⅞	24¼	37⅝	27⅝	38	27⅛	(sh) 922,075	N.P.	Amerada Corp.	50cQ	Oct. 31, 28	12,500	33⅛	35½	31½	34⅞	+ 2⅞
74	39⅞	82½	35⅛	85	51¼	(sh) 209,180	N.P.	American Republics Corp.	.....	.....	11,000	70½	73⅞	67⅛	71½	— ⅛
60	44¾	50¼	35	53⅜	37½	$56,000,000	$25	Associated Oil	50cQ	Sept. 29, 28	40	48	48⅛	47	47	— 1
128⅝	97	131⅜	104	239⅝	95¾	50,000,000	100	Atlantic Refining	$1Q	Sept. 15, 28	28,900	220	233¾	217½	220	— 7
33½	23½	35½	20¾	47⅛	20	28,725,675	25	Barnsdall Corp. A	50cQ	Oct. 31, 28	141,000	42⅞	44⅜	40⅛	43½	+ ¾
94¼	50	96¾	65	94⅞	68	20,785,400	100	General Asphalt	.....	.....	9,300	71¼	74½	70⅜	72½	— ½
72	50¼	175¾	60⅛	167	119	25,000,000	100	Houston Oil	.....	.....	7,100	139	139½	133	137½	+ ½
34	19⅝	32¾	17⅝	34¼	21¾	(sh) 500,000	N.P.	Independent Oil & Gas	37½cQ	Oct. 31, 28	39,900	32¾	33⅝	31⅜	33⅛	+ ¾
12¾	7½	12⅛	7⅝	39⅝	9	$3,280,340	$10	Indian Refining	.....	May 31, 24	17,600	31⅛	32¾	30⅝	31½	— ¼
25⅞	16½	37¾	20½	39⅛	27⅜	(sh) 3,992,122	N.P.	Lago Oil & Transport	.....	May 1, 27	2,000	32⅛	34⅝	32	34	+ ¾
19⅞	12	18⅛	10	19¾	9⅜	(sh) 1,237,078	N.P.	Lousiana Oil Refining	.....	.....	75,200	16¾	17½	16	17½	+ ⅝
28	16½	22¾	12	25½	12½	(sh) 330,000	N.P.	Maracaibo Oil	.....	.....	5,800	20	20¼	18⅜	20	+ ½
63⅝	49¼	58½	31	44½	33	(sh) 2,316,692	N.P.	Marland Oil Co.	.....	Mar. 31, 27	254,300	43⅝	46⅝	41⅛	45⅞	+ 2⅛
13¾	6	9¼	3	41½	4⅝	(sh) 945,939	N.P.	Mexican Seaboard	.....	Dec. 15, 20	213,900	36	39½	36⅛	38	+ 1⅞
37	20½	39⅜	25½	38⅜	25⅛	(sh) 1,357,461	N.P.	Mid-Continent Petroleum	.....	Aug. 1, 27	89,400	37¾	38⅜	35⅝	37⅜	+ ⅛
104¼	90	105	97	115⅛	103¼	$6,718,000	$100	Mid-Continent Petroleum pfd.	$1.75Q	Sept. 1, 28	300	112½	114	112½	113	+ ½
2½	½	3¾	1⅝	7⅜	2⅜	24,298,850	10	Middle States	.....	July 1, 23	18,900	5¾	5⅞	5½	5⅞	+ ⅛
76½	56⅛	65⅞	40¼	53¾	38¼	$48,807,400	$50	Pan American P. & T.	.....	Oct. 20, 27	12,800	50	51⅜	47	50	.....
78⅝	56⅞	66⅜	40¼	54⅝	37¾	121,097,900	50	Pan American P. & T. B.	.....	Nov. 15, 24	130,500	51½	53	48⅛	51¼	— ¾
46	30	37⅞	16¾	28⅜	15½	(sh) 400,000	N.P.	Pan American Western B	.....	Jan. 30, 27	1,700	....	17⅛	17¼	17½	.....
32	4½	18⅞	8	21¾	11½	(sh) 198,770	N.P.	Panhandle P. & R.	.....	.....	5,000	16¼	16⅜	14½	16	— ⅜
99⅜	51	83	54	106¼	70	$2,935,200	$100	Panhandle P. & R. pfd.	.....	July 2, 23	500	90	90	90	90	.....
57⅜	40	60¼	36¼	45¾	35¼	(sh) 2,406,796	N.P.	Phillips Petroleum	37½Q	Oct. 1, 28	89,800	44¼	46⅜	43½	46	+ 1⅜
....	....	1⅛	½	5¼	½	$29,622,925	$25	Pierce Oil Corp.	.....	.....	17,200	3¼	3⅜	2⅞	3¼	.....
7	2¼	5½	2½	6⅝	3½	(sh) 2,500,000	N.P.	Pierce Petroleum	.....	.....	9,500	5¾	6	5½	5½	— ½
20¾	11	33⅞	16¾	28⅝	16	$37,450,850	$50	Producers & Refiners	.....	Sept. 15, 23	7,300	24⅛	25¾	23¼	24⅞	+ ¾
41⅜	30¾	50	36⅞	49⅝	41	2,845,350	50	Producers & Refiners pfd.	.....	May 1, 25	100	43½	43½	43½	43½	.....
31	25¼	33½	25	28½	19	75,959,350	25	Pure Oil Co.	37½cQ	Dec. 1, 28	77,000	27⅞	28⅜	26⅛	26⅞	— ¾
27½	22	28⅝	25⅜	53	23½	$29,224,894	$25	Richfield Oil	.....	Oct. 20, 27	34,700	47½	49½	46⅞	48¼	+ ¾
57⅜	47⅜	54½	44¼	63⅜	44⅝	(sh) 611,303	13.40	Royal Dutch, N. Y. shares	$1.879	Aug. 3, 28	4,800	62⅛	62½	60¾	62	.....
48⅝	40½	47⅞	41⅜	57½	40⅝	(sh) 77,590	£2	Shell Transport & T.	$1.455	July 23, 28	No sales.					
31	24	31¾	24⅝	31⅞	23¼	(sh) 10,000,000	N.P.	Shell Union Oil	35cQ	Sept. 30, 28	106,400	31⅜	32½	30½	32⅜	+ ½
28⅝	15⅛	26⅜	14¼	25½	18⅛	$7,208,080	$10	Simms Petroleum	.....	Apr. 1, 27	11,800	24⅜	24⅞	23½	24	— ¾
24⅞	16¾	22⅜	15	37½	17⅜	(sh) 4,501,915	N.P.	Sinclair Consolidated	.....	.....	1,363,300	36½	44⅛	36½	42	+ 5½
99½	90	104½	97	109½	102½	$16,604,660	$100	Sinclair Consolidated pfd.	$2Q	Aug. 15, 28	800	110	110	107	107½	+ ½
37⅛	26⅝	37⅜	24⅛	39	25	27,396,590	25	Skelly Oil Co.	50cQ	Sept. 15, 28	43,900	38⅝	39	36½	38	— ⅝
63⅝	51½	60¾	50⅜	63⅞	53	(sh) 13,016,434	N.P.	Standard Oil of California	62½cQ	Sept. 15, 28	37,800	62⅝	63¼	61	62⅜	+ ¼
46⅜	37½	41⅜	35⅛	49	37¾	$607,910,525	$25	Standard Oil of New Jersey	125cQ	Sept. 15, 28	143,500	46¾	48⅛	46⅜	47⅞	+ 1⅛
47¼	30⅜	34⅛	29¾	41½	28¾	427,973,275	25	Standard Oil of New York	40cQ	Sept. 15, 28	90,700	36	36⅜	35⅛	35⅞	.....
41⅝	30⅛	34⅞	30	65⅛	31½	(sh) 1,206,073	N.P.	Sun Oil	25cQ	Sept. 15, 28	5,200	61	63	61⅝	62	— 1¼
5¼	1	6½	3⅛	11⅞	2½	(sh) 1,121,368	N.P.	Superior Oil Corp.	.....	Dec. 20, 20	94,600	10½	11½	10	10⅜	— ½
58	48	58	45	73½	50	$180,480,550	$25	The Texas Corporation	75cQ	Oct. 1, 28	53,700	68	69¼	67	68¾	.....
19½	12	18⅞	12	17½	12½	8,380,340	10	Texas Pacific Coal & Oil	.....	Jan. 3, 28	95,100	17⅛	19¼	17	19¼	+ 2
39¼	27	29⅛	19	36	19⅝	(sh) 2,168,410	N.P.	Tide Water Oil Co.	20cQ	Sept. 29, 28	6,800	34	34⅞	33⅛	34	.....
103	87¼	90⅛	85	95¼	86	$20,705,200	$100	Tide Water Oil Co. 5% pfd.	$1.25Q	Nov. 15, 28	1,100	95¼	88⅞	88½	88⅞	— ⅛
27	20⅞	19⅛	15¾	25	14¾	(sh) 4,796,158	N.P.	Tide Water Associated	.....	Aug. 1, 27	42,500	22½	23	21¼	22½	.....
5½	3	10⅜	3¾	10⅛	7¼	(sh) 3,742,029	N.P.	Transcontinental Oil	.....	.....	38,800	8⅝	8⅞	8⅛	8⅜	.....
58⅜	37¼	56½	39⅝	57	42¾	$40,791,225	$25	Union Oil of California	50cQ	Nov. 10, 28	15,300	52	54⅝	51½	52½	— ½
120⅝	84¼	127½	94	128⅛	116¾	30,844,000	100	Union Tank Car Co.	$1.25Q	Sept. 1, 28	200	....	117	116	116	.....
30¼	23½	34½	24½	44⅞	26	(sh) 310,956	N.P.	Warner Quinlan	50cQ	Oct. 1, 28	49,700	41⅜	43½	41⅛	42¼	+ 1⅛
29¾	25⅛	27½	20	30¼	20⅛	(sh) 490,000	N.P.	White Eagle Oil & Refining	50cQ	Oct. 20, 28	8,600	29½	29⅞	28½	28⅝	— 1¼

*Odd lots. ‡Also extras.

STANDARD OIL STOCKS ON NEW YORK CURB

21	16	21⅝	17⅞	22⅜	16⅜	£4,126,460	£1	Anglo-American Oil	24.4c	June 6, 28	6,000	18¾	19⅛	18⅜	18⅝	— ⅛
....	....	3¾	¾	5	1¼	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	2,700	3⅛	3⅜	2⅜	2⅞	— ⅛
75	65	69	50	56	45½	1,000,000	25	Borne Scrymser	$18.A.	Oct. 15, 28	No sales—44@48.					
59½	42	60	45	76	53	10,000,000	50	Buckeye Pipe Line	$1Q	Sept. 15, 28	500	66	67¾	66¼	66¼	+ ¼
82½	65	126	76½	161	117¼	3,000,000	25	Chesebrough Mfg.	$1Q	Sept. 29, 28	No sales—145@150.					
25⅞	17½	22⅝	16¼	23	16	36,057,840	10	Continental Oil	.....	Dec. 15, 27	11,900	17¾	18⅜	17⅝	18⅜	+ ¾
137	102	137	89	114	88	3,000,000	100	Cumberland Pipe Line	$2Q	Sept. 15, 28	No sales—82@88.					
63¾	43	68½	47	88	64⅛	5,000,000	100	Eureka Pipe Line	$1Q	Nov. 1, 28	No sales—66@68½.					
32½	9⅞	13½	3½	12	5	16,000,000	100	Galena Signal Oil	.....	June 30, 25	800	7¾	9	7¾	7¾	+ ⅛
68⅛	52	68½	54	86⅝	60	73,117,577	25	Humble Oil & Refining	30cQ	Oct. 1, 28	39,900	85⅝	88½	83⅝	87¾	+ 2½
144½	125½	182	123¾	245	176½	20,000,000	100	Illinois Pipe Line	$68.A.	June 15, 28	7,250	225	264	225	262	+39¾
....	....	64¾	37¾	84¾	56¾	(sh) 6,458,267	N.P.	Imperial of Canada	25cQ	Sept. 1, 28	21,800	83	93	83	92½	+ 8¾
72½	58	94½	61	91⅞	74⅞	$5,000,000	$50	Indiana Pipe Line	$1Q	Nov. 15, 28	300	85	83¼	82	83¼	— 1⅞
35½	28⅝	39	28¼	45¼	35	(sh) 17,123,444	N.P.	International Petroleum	25c	June 30, 28	168,800	44¼	41	44	49½	+ 5¼
20⅜	12½	24	13¼	32⅜	20⅛	$6,363,350	12.50	National Transit Co.	25cQ	Sept. 15, 28	900	23¾	23¾	23	23	— ½
51½	27¼	44½	31¾	75	37½	5,000,000	100	New York Transit	.....	July 15, 26	100	74	74	74	74	— 1
80½	64	100	70	125	62	4,000,000	100	Northern Pipe Line	$38.A.	July 1, 28	100	62	62	61¾	61¾	— 1¼
67¾	55⅜	67⅞	52	68¼	58	60,000,000	25	Ohio Oil Co.	50cQ	Sept. 15, 28	3,100	63½	64½	63⅜	64	+ ½
24¾	15	39	12	44	29	10,000,000	25	Penn Mex. Fuel	$1.25	May 31, 28	300	39	39	38½	38½	— ½
137½	122½	190	132	223	172	81,000,000	100	Prairie Pipe Line	$3.50	Oct. 31, 28	12,100	207¾	236	207¾	215½	+ 7½
60¼	48	55½	45⅝	56	46	60,000,000	25	Prairie Oil & Gas	.....	Aug. 31, 27	18,600	53	54⅞	52⅝	53⅝	+ ¾
220	84½	201½	175½	186	167	4,000,000	100	Solar Refining	$58.A.	June 20, 28	400	202	205	194	205	+35½
74½	61½	27¼	15½	35⅞	12	5,000,000	50	Southern Pipe Line	$2	Dec. 1, 27	700	15	16	15	16	+ 1½
50	34½	41½	35	68	36¾	2,000,000	25	South Penn Oil	50cQ	Sept. 29, 28	4,100	65	65⅝	62⅜	64½	— ½
56	47½	83	55½	100	70	3,500,000	100	Southwest Pa. Pipe Lines	$1Q	July 2, 28	No sales—80@84.					
70½	60½	81½	64⅝	83⅝	70⅞	228,415,463	25	Standard Oil of Indiana	62½Q	Sept. 15, 28	42,700	80¾	81⅞	79¼	80⅞	— ⅜
36½	16½	20⅞	14⅝	27¾	15	8,000,000	25	Standard Oil of Kansas	.....	June 16, 24	3,400	21½	22½	21¼	22¼	+ ½
134⅜	108	130	111½	154	122¼	17,012,559	25	Standard Oil of Kentucky	$1Q	Sept. 29, 28	17,300	153¾	157⅝	151¼	155¾	+ 2¾
51⅜	42	49½	40	49⅞	39⅞	4,559,850	25	Standard Oil of Nebraska	63cQ	Sept. 20, 28	500	46	47	46	46⅞	+ 2⅝
372	288	87½	72	95	71	14,000,000	25	Standard Oil of Ohio	62½cQ	Sept. 1, 28	1,300	93	95	93	94¾	+ 1¼
21	15	21	14½	26	16	30,734,000	25	Swan Finch Co.	.....	Nov. 1, 19	No sales—20@23.					
109¾	90¼	....	....	87⅛	72¼	124,941,600	25	Vacuum Oil	75cQ	Sept. 20, 28	23,800	81¾	85¼	82	85⅜	+ 3⅜

tinues to strengthen in every department. The outstanding improvement is particularly gratifying in California, where the second well, No. 2 Luton Bell, in the recently discovered field near Santa Barbara has been drilled into the sand and will be placed on production by November 2. It has every indication of being at least as large as the original well, which continues, pinched in, to produce over 100 bbls. an hour.

"The third well, No. 1 Doty, located 1,550 feet east of the discovery well, is in the producing formation and will be on production within 10 days.

"No. 1 Elwood, located 6,000 feet east of the initial well, is 40 feet in the producing formation and stands cemented, and it is expected will be on production within two weeks. In fact, our California situation promises to be of great magnitude."

Mr. Reeser points out the steady improvement of earnings this year, showing $1.09 a share on outstanding stock for the third quarter, against 49 cents a share in the second quarter and 31 cents in the first.

Louisiana Oil

Louisiana Oil Refining Corp. and subsidiaries report for nine months ended September 30, 1928, consolidated profit of $1,137,133 after interest, depreciation, depletion, amortization, drilling expenses, etc., but before Federal taxes, compared with profit of $273,316 before Federal taxes in first nine months of 1927.

Profit for the September quarter was $549,075 before Federal taxes, comparing with $426,904 in preceding quarter and net loss of $17,310 in third quarter of 1927. Stock outstanding amounts to $4,000,000 6½-per cent preferred and 1,190,063 shares of nopar common.

Carib Syndicate

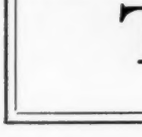
Carib Syndicate, Ltd., directors voted to distribute to stockholders 525,000 shares of the nopar common stock of the Colon Oil Corp. This stock represents the Carib Syndicate's interest in the Colon Oil Corp., which controls the

(Continued on Page 136)

Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.



Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

DIESEL ENGINES FUEL OIL SPECIFICATIONS

We wish to set up specifications for fuel oil which is to be used in Diesel engines and would appreciate the most important elements to be listed, including sulphur. What are considered to be the outside limits on sulphur and is a sulphur specification difficult to obtain?—C. L. M.

Standard specifications for fuel oil, as published in Technical Paper 323B, Bureau of Mines, are suitable for Diesel engine fuels. This publication may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., for 15 cents. The general statement under these specifications on page 5 is: "This specification covers the grade of oil used by the United States Government and its agencies where a high-grade fuel oil is required. This oil may be used in Diesel engines."

The utility and economy of the Diesel engine depends to a great extent on its ability to burn a wide range of comparatively heavy oils that are obtainable at low cost. If the specifications are made so that the properties must be kept within narrow limits, then it becomes increasingly difficult to obtain the oil and the cost must advance. The minimum flash of all fuel oils for this purpose is 150 degrees Fahrenheit. This is for safety purposes and has no bearing upon the quality of the oil. Viscosities range from 100 at 77 degrees Fahrenheit to 300 at 122 degrees Fahrenheit. Water and sediment should not exceed 2 per cent. The Navy standard fuel has a sulphur specification of not more than 1.5 per cent.

Sulphur in fuel oils varies between 0.2 per cent to about 2.0 per cent. In most cases the sulphur content is not important enough to be stressed provided the oil is free from water. The exhaust line and header may suffer serious corrosion when burning a high sulphur oil in the presence of small quantities of water. This is because the sulphur combines with the water to form acids of sulphur. Water is a product of combustion and this will combine with sulphur in the same way if the temperature of the cooling jacket is kept low enough to condense the water.

It is usually not difficult to obtain a fuel oil with reasonable sulphur specifications.

METHODS FOR DETERMINING GASOLINE CONTENT OF GAS

Would you kindly advise if there is any method or table showing the per cent of residue or dry gas per 1,000 cubic feet after the extraction of the gasoline? The gas to which we wish to apply this table ranges in content from 4 to 22 gallons per 1,000 cubic feet.—W. E. B.

You may have reference to the indirect methods for determining the gasoline content of gas. These are based on the determination of specific gravity and the solubility of the gasoline, present in the gas, in an oil and the measurement of the reduced volume. These are considered to be approximate methods.

More reliable results may be obtained by the direct methods. These include compression of the gas in a portable compressor; absorption in oil and recovery of the gasoline distillation; extraction of the gasoline by special charcoal.

The tables below are from Recovery of Gasoline from Natural Gas, by Burrell, pages 111 and 114.

Specific Gravity of Constituents of Natural Gas

Methane	0.554
Ethane	1.038
Propane	1.523

The next four are main constituents of natural gasoline.

Butane	2.007
Pentane	2.491
Hexane	2.975
Heptane	2.975

The approximate quantity of 86 gravity gasoline, and of vapor pressure of about 10 pounds, in natural gas of different gravities and different solubilities in mineral seal oil is shown in the table.

Solubility	Specific Gravity	Gasoline Gals. per 1,000 cu. ft.
10	0.56	none
20	.70	0.50
25	.85	1.50
30	1.00	2.50
40	1.25	5.00
70	1.50	8.00

These methods simply indicate whether or not the gas is dry and if you have no means for measuring the gas on a small scale, it will be necessary to make allowance for the gasoline removed. An approximate figure for this is 35 cubic feet per gallon of gasoline removed.

BURNING HIGH SULPHUR GAS

Is it necessary in order to prevent serious corrosion to scrub gas containing about 4 per cent hydrogen sulphide before burning it for fuel purposes under stills and boilers?—G. L.

When sulphur is present in a fuel the extent of corrosion will be influenced by temperature and the presence of moisture. This subject was mentioned by Colonel Auld, Journ. Instn. Petroleum Technologists, vol. 14, page 199, (April, 1928) from which the material below is taken.

"Experience was cited of boiler plates becoming brittle when used with sulphurous gases and appeared to be confirmed by the corrosion of drilling bits when reconditioned in a gas-fired forge and by the scaling of an experimental boiler heated directly by gas flames of varying air content. On the other hand, conditions in furnaces or under boilers are not those likely to prove favorable to acidic corrosion. Moisture is essential to corrosion by sulphur dioxide, and experience in the past has shown that with solid or liquid fuels of (relatively) high sulphur content no corrosion need be feared if the temperature does not fall appreciably below 400 degrees Fahrenheit. Corrosive action in flues and chimneys under such conditions can obviously be guarded against by the use of suitable materials or linings. On the other hand, incomplete combustion of the gas can lead to the formation of elementary sulphur, and under certain conditions, as for example of impingement of a luminous or partly luminous flame, the sulphur may exist sufficiently long to combine with the iron or steel of the boiler tubes or shell with formation of sulphide and ultimate formation of ferric sulphate, accompanied by severe blistering, scaling and pitting. This is undoubtedly the explanation of the boiler scaling mentioned above.

Corrosion from the use of even the most sulphurous of gases should only take place:

(a) With incompletely burned gas and direct impingement of the flame on corrodable metal.

(b) At particularly low temperatures of the metallic surface whereby momentary condensation of solutions of sulphurous or sulphuric acid may take place.

Conditions under (b) are only likely to be met when flame makes actual contact with metal in very low pressure boilers, or low-temperature stills, having a particularly small temperature difference between metal and water. An example was cited in which the tubes of a water tube boiler were burned out when fired with oil. The wasting was from the outside and was definitely traced to the effect of sulphur in the oil, the clean tubes being cool enough to permit condensation of sulphuric acid, whereas previously the metal had been too hot. The trouble once begun was aggravated by the ferrous and ferric sulphates produced fusing and acting as a flux.

It was concluded, therefore, that no serious trouble would be experienced in modern boilers equipped with suitable and efficient methods of firing, and this view was confirmed by experiment and since then fully borne out in practice."

EMULSIFIED CRUDE OIL

Recently I have read that there are 100,000,000 bbls. of emulsified crude oil in storage tanks and sump holes and that refiners are seeking a cheap way of separating the oil from the water. Is there any process used for this process, and please describe the same?—A. C. M.

While we have been taught that water and oil do not mix, you are correctly informed that there are large quantities of emulsified crude oil waiting for a satisfactory process which will permit the recovery of the oil. In every field the producer must devise some scheme for separating oil and water. Frequently the emulsion is so stable that all known methods fail to effect a separation, so the mixture is burned in order to rid the property of it.

Day, in his Handbook of the Petroleum Industry, states, Vol. 1, page 54, "In some cases one-third of the entire oil consisted of resinous matter very similar to the resin extracted from the near-by shale. Monterey shale resin upon being heated broke down into water and a succession of oils which showed the usual fractions. It was noted that very little water was driven out from this material until considerably above the boiling point of water." This, and the work of other investigators, suggests that the water is soluble in the resins and that several chemical substances present in underground waters combine with these resins, forming substances known as mineral soaps. These substances make separation difficult.

The Bureau of Mines has studied these emulsions, as reported by D. B. Dow in Bulletin 250, Oil-Field Emulsions. This publication may be obtained from the Superintendent of Documents, Washington, D. C., for 25 cents.

The methods now in use include dehydration through the application of heat and settling. This heating in some cases is carried to a point where there is partial distillation and the hot water withdrawn from the bottom of the heating unit. Treatment with chemicals is used extensively in many fields and is often combined with application of heat, washing with water and settling. The chemicals are in most instances of the water softening type and the process under patent control. The electrical treatment makes use of the principles applied for the precipitation of carbon from smoke, dust from smelters, cement mills, etc. Through the influence of a high potential alternating current the small particles of water combine and the larger drops then separate. Another process is the dehydration by centrifugal force in special machines. The centrifugal machines rotate at a very high speed, about 17,000 r.p.m., and cause a separation of the two liquids because of the difference in gravity in exactly the same way that a somewhat smaller machine causes the separation of cream from milk.

IRON CARBONYL FOR ANTIKNOCK GASOLINE

In a recent copy of The Oil and Gas Journal (October 11, 1928) the following question appeared: "What other chemicals besides ethyl lead are successfully used in producing antiknock gasoline?" In your answer you mention the use of iron carbonyl. Will you have the kindness to advise us where this material may be obtained?—G. E. C.

We do not know of any of this product being marketed in the United States as an antiknock material in motor fuels. Some iron carbonyl is reported to be used for this purpose in Germany. Any one of the leading manufacturing chemists could prepare this substance because the steps for making it are known to the organic chemist and its properties have been fully described.

Iron carbonyl is almost 50 per cent heavier than water, having a specific gravity of 1.45. It is a liquid with a reddish yellow color, boils at 217 degrees Fahrenheit and dissolves in gasoline. The quantities added to gasoline for an antiknock rating of approximately 40 per cent benzol, are very small, that is, about 0.2 to 0.25 per cent by volume. There are several iron carbonyls but the compound usually mentioned for antiknock use is the pentacarbonyl, having the formula $Fe(CO)_5$.

The physical and chemical properties of the iron carbonyls were described in a special paper by A. C. Fieldner and G. W. Jones in the American Gas Association Monthly, Vol. 6, page 439 (1924.) This article lists a good bibliography on the subject.

HYDROGEN SULPHIDE IN HENDRICKS GAS

Can you tell us what is the maximum percentage of hydrogen sulphide by volume in the gas of the Hendricks Pool, Winkler County, Texas, and what is the average percentage? What is the percentage of hydrogen sulphide in the gas from southern Lea County, New Mexico? —T. D. C.

There is a wide variation in the hydrogen sulphide content of the gas produced in Winkler County. The reports we have had show hydrogen sulphide from 0.6 per cent to 6 per cent by volume in the gas from the Hendricks Pool.

There is little information available about the composition of the gas from Lea County, New Mexico. However, there appears to be considerable hydrogen sulphide in the gas and it is reported to have the same general characteristics as that found in the Panhandle of Texas.

BIG DECLINE IN INITIAL OUTPUT OF WELLS COMPLETED IN OCTOBER

The report of field operations in October in the states east of California shows a total of 2,039 completed wells, a gain of 73 over September, but a decline of 483,621 bbls. in initial production, real and potential; a falling off of 24 dry holes and a gain of 50 gas wells.

A decline of 408,168 bbls. in initial production in the West Texas fields and a decline of 74,020 bbls. in Oklahoma best tell the story of the falling off in the grand total. Initial production in the Pecos and Winkler Pools in West Texas is based on potential and not on actual first 24-hour production, because the new gusher wells in those pools are not permitted to produce more than one hour, after which they are pinched down to their prorated production. This has been so since proration was begun. The decline in initial production in those pools and in Oklahoma may be taken to mean, however, that the wells brought in in October were not as big producers as those completed the month previously, and the total decline in initial production is a true indication in the trend of development work.

In new work an increase is noted. There were 38 more rigs and 77 more wells drilling at the close of October than at the close of September, which, together with the gain of 73 in completed wells, shows a total increase in operations of 188 during October.

SUMMARY OF ALL FIELDS

Wells Completed

Field—	Comp.	Prod.	Dry	Gas
Eastern	415	1,742	28	67
Central Ohio	113	634	26	55
Lima	27	428	8	2
Indiana	17	95	6	6
Michigan	20	2,765	3	9
Illinois	22	334	10	3
Kentucky	125	3,353	32	5
Tennessee	2	70	0	0
Mississippi	0	0	0	0
Oklahoma	370	140,718	107	38
Kansas	100	5,273	45	13
Texas Panhandle	36	13,226	7	8
North Cent. Texas	343	14,863	156	14
East Cent. Texas	7	600	4	2
West Texas	99	431,668	23	0
Southwest Texas	89	5,929	20	14
East Texas	4	0	0	4
Gulf Coast	92	25,561	43	0
North Louisiana	41	50	20	19
Arkansas	43	2,773	22	7
Wyoming	20	3,444	6	3
Montana	31	2,000	9	3
Colorado	18	2,616	8	0
New Mexico	3	250	1	1
Utah	2	0	2	0
Total Oct.	2,039	658,392	586	273
Total Sept.	1,966	1,142,013	610	223
Difference	73	483,621	24	50

Rigs and Wells Drilling

Field—	Rigs	Drlg.	Total
Eastern	109	371	480
Central Ohio	91	154	245
Lima	6	26	32
Indiana	4	63	67
Michigan	35	68	103
Illinois	2	18	20
Kentucky	12	180	192
Tennessee	4	13	17
Mississippi	0	22	22
Alabama	0	4	4
Oklahoma	172	772	944
Kansas	37	266	303
Texas Panhandle	32	125	157
North Central Texas	88	350	438
East Central Texas	3	11	14
West Texas	77	421	498
Southwest Texas	45	138	183
East Texas	3	19	22
Gulf Coast	25	178	203
North Louisiana	29	85	114
Arkansas	20	59	79
Wyoming	36	151	187
Montana	34	101	135
Colorado	15	84	99
New Mexico	18	84	102
Utah	0	32	32
Total Oct.	897	3,795	4,692
Total Sept.	859	3,718	4,577
Difference	38	77	115

OKLAHOMA

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Carter	9	509	2	..
Creek	32	930	15	5
Grady	5	....	1	4
Jefferson	12	217	5	1
Kay	9	1,407	3	4
Muskogee	17	153	7	5
Okfuskee	9	430	3	1
Okmulgee	24	201	11	2
Osage	25	962	7	5
Pontotoc	10	2,352	4	..
Pottawatomie	44	65,822	2	..
Seminole	93	65,373	14	1
Stephens	25	889	6	2
Tulsa	4	3	1	2
Wagoner	11	11	6	3
Miscellaneous	41	1,459	20	3
Total Oct.	370	140,718	107	38
Total Sept.	317	214,738	98	31
Difference	53	74,020	14	7

Summary of Rigs and Wells Drilling

County—	Rigs	Dlg.	Comp.
Carter	4	16	20
Creek	21	57	78
Grady	3	14	17
Hughes	1	14	15
Kay	..	16	16
Logan	3	19	22
Muskogee	4	32	36
Okfuskee	14	30	44
Okmulgee	5	47	52
Osage	13	25	38
Payne and Lincoln	4	11	15
Pontotoc	6	26	32
Pottawatomie	37	163	200
Seminole	38	151	189
Stephens	9	35	44
Tulsa	1	11	12
Wagoner	1	8	9
Miscellaneous	8	97	105
Total Oct.	172	772	944
Total Sept.	139	773	912
Difference	33	1	32

KANSAS FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Butler	19	2,234	9	0
Chautauqua and Elk	5	205	1	1
Cowley	6	0	3	3
Greenwood	15	510	10	1
Marion	5	150	4	0
Sumner	12	748	2	3
Miscellaneous	38	1,426	16	5
Total October	100	5,273	45	13
Total September	66	6,280	22	7
Difference	34	1,007	23	6

Summary of Rigs and Wells Drilling

County—	Rigs	Drlg.	Ttl.
Butler	9	30	39
Cowley	5	37	42
Elk	2	28	30
Ellis	2	14	16
Greenwood	4	25	29
McPherson	1	13	14
Marion	2	10	12
Rooks	0	7	7
Russell	0	7	7
Sedgwick	1	10	11
Sumner	4	15	19
Woodson	0	8	8
Miscellaneous	7	62	69
Total October	37	266	303
Total September	56	243	299
Difference	19	23	4

TEXAS PANHANDLE

Wells Completed

County—	Comp.	Prod.	Dry holes	Gas wells
Carson	3	....	2	1
Gray	22	12,621	4	2
Hutchinson	5	605	..	..
Motley	1	....	1	..
Wheeler	5	....	..	5
Total October	36	13,226	7	8
Total September	22	2,385	4	6
Difference	14	10,841	3	2

Rigs and Wells Drilling

County—	Rigs	Wells Drlg.	Wells S.D.	Wells Ttl.
Carson	3	6	3	12
Gray	13	48	8	69
Hutchinson	4	14	8	26
Moore	4	7	..	11
Wheeler	7	8	3	18
Misc. counties	1	11	9	21
Total October	32	94	31	157
Total September	37	97	28	162
Difference	5	3	3	5

NORTH CENTRAL AND WEST TEXAS

Wells Completed
West Texas

County—	Comp.	Prod.	Dry holes	Gas wells
Andrews	1	....	1	..
Crane	2	460	..	..
Crockett	2	....	2	..
Fisher	1	258	..	..
Glasscock	1	....	1	..
Howard	19	9,981	2	..
Irion	1	....	1	..
Jones	6	188	4	..
Martin	1	....	1	..
Mitchell	1	....	1	..
Pecos	13	142,540	4	..
Reagan	3	815	..	..
Reeves	1	....	1	..
Runnels	1	....	1	..
Upton	1	....	1	..
Winkler	45	277,426	3	..
Total October	99	431,668	23	..
Total September	112	839,836	21	..
Difference	13	408,168	2	..

North Central Texas

Archer	34	1,127	15	..
Brown	32	645	15	3
Callahan	7	5	5	..
Clay	7	33	3	..
Coleman	20	200	13	3
Comanche	2	....	1	1
Cooke	4	20	3	..
Eastland	19	690	8	1
Erath	1	....	..	1
Foard	1	....	1	..
Jack	7	190	6	..
McCulloch	3	....	3	..
Montague	4	16	1	1
Palo Pinto	2	....	2	..
Shackelford	35	1,162	12	3
Stephens	7	128	2	1
San Saba	1	....	1	..
Throckmorton	4	36	3	..
Wichita	45	1,365	14	..
Wilbarger	46	8,155	11	..
Young	62	1,091	37	..
Total October	343	14,863	156	14
Total September	307	16,804	146	10
Difference	36	1,941	10	4

Rigs and Wells Drilling
West Texas

County—	Rigs	Wells Drlg.	Wells S.D.	Wells Ttl.
Crane	2	7	..	9
Crockett	2	3	5	10
Fisher	3	4	2	9
Howard	11	42	3	56
Jones	3	20	7	29
Mitchell	..	2	1	3
Pecos	7	23	12	42
Reagan	9	3	2	14
Runnels	2	4	5	11
Upton	3	3	3	9
Winkler	35	94	19	148
Misc. counties	12	35	51	98
Total October	88	240	110	438
Total September	91	253	91	435
Difference	3	13	19	3

North Central Texas

Archer	14	28	6	48
Brown	6	35	27	68
Callahan	..	4	3	7
Coleman	3	35	10	48
Cooke	3	6	7	16
Clay	..	..	8	8
Eastland	8	19	8	35
Jack	2	9	7	18
Montague	1	4	3	8
Palo Pinto	3	6	4	13
Shackelford	2	6	1	9
Stephens	5	18	1	24
Throckmorton	..	3	3	6
Wichita	8	24	2	34
Wilbarger	12	14	52	78
Young	8	28	6	42
Misc. counties	2	18	16	36
Total October	77	257	164	498
Total September	96	280	146	522
Difference	19	23	18	24

GULF COAST

Summary of Field Operations for October
Texas

	Comp.	Prod.	Dry	Gas	Rigs	Dlg.	Ttl.
Barbers Hill	1	0	1	0	1	3	4
Batson	4	54	0	0	0	4	4
Big Creek	1	0	1	0	0	4	4
Blue Ridge	11	5,345	3	0	2	6	8
Boling	5	400	4	0	2	6	8
Damon Mound	1	400	0	0	1	0	1
DeWalt	2	4,000	1	0	1	3	4
High Island	2	10	1	0	0	2	2
Hull	4	2,825	0	0	0	6	6
Humble	1	325	0	0	0	6	6
Liberty	3	1,255	0	0	0	4	4
Markham	0	0	0	0	0	1	1
Nash	2	0	2	0	0	3	3
Orchard	0	0	0	0	0	3	3
Orange	4	180	2	0	0	5	5
Pierce Junction	6	4,150	2	0	1	9	10
Raccoon Bend	1	0	1	0	3	4	7
Saratoga	2	8	1	0	0	4	4
Sour Lake	2	64	1	0	1	1	2
Spindletop	10	4,165	2	0	2	19	21
West Columbia	0	0	0	0	0	1	1
Miscellaneous	10	150	9	0	3	28	31
Total Oct.	72	23,331	31	0	17	122	139
Total Sept.	82	30,163	30	1	11	143	154
Difference	10	6,832	1	1	6	21	15

Louisiana

	Comp.	Prod.	Dry	Gas	Rigs	Dlg.	Ttl.
Atchafalaya	0	0	0	0	0	4	4
Anse La Butte	0	0	0	0	0	1	1
Edgerly	2	25	1	0	0	2	2
Hackberry	5	1,990	3	0	1	2	3
Jennings	3	105	1	0	1	10	11
Lockport	3	100	1	0	0	4	4
Starks	0	0	0	0	0	3	3
Sorrento	0	0	0	0	0	1	1
Sulphur	1	0	1	0	1	6	7
Sweet Lake	0	0	0	0	0	1	1
Vinton	2	10	1	0	1	6	7
Miscellaneous	4	0	4	0	4	16	20
Total Oct.	20	2,230	12	0	8	56	64
Total Sept.	38	5,718	30	0	9	46	55
Difference	18	3,488	18	0	1	10	9
Total Gulf Coast Oct.	92	25,561	43	0	25	178	203
Total Sept.	120	35,881	79	1	20	189	209
Difference	28	10,320	36	1	5	11	6

SOUTHWEST TEXAS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rgs	Dlg.	Ttl.
Mirando	32	4,548	5	6	14	35	49
Luling	6	117	0	0	0	5	5
Dale	4	175	0	0	0	0	0
Joe Bruner	3	720	1	0	1	15	16
Roxana-Larremore	3	177	0	0	1	0	1
Somerset	18	159	0	0	0	1	1
Refugio	6	10	0	6	5	4	9
Miscellaneous	17	23	14	2	24	78	102
Total Oct.	89	5,929	20	14	45	138	183
Total Sept.	74	6,406	22	15	33	145	178
Difference	15	477	2	1	12	7	5

EAST CENTRAL TEXAS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Dlg.	Ttl.
Anderson	3	600	1	1	1	4	5
Cherokee	1	0	1	0	1	2	3
Freestone	0	0	0	0	0	1	1
Henderson	0	0	0	0	0	0	0
Limestone	2	0	1	1	2	2	4
Navarro	0	0	0	0	0	0	0
Rusk	0	0	0	0	0	1	1
Smith	1	0	1	0	0	1	1
Total Oct.	7	600	4	2	3	11	14
Total Sept.	12	472	10	0	3	15	18
Difference	5	128	6	2	0	4	4

NORTH LOUISIANA

Summary of Field Operations

	Comp.	Prod.	Dry	Gas*	Rigs	Drg.	Ttl
Bienville	0	0	0	0	0	3	3
Bossier	9	0	5	4	3	6	9
Caddo	4	20	2	1	0	18	18
Catahoula	0	0	0	0	0	2	2
Claiborne	0	0	0	0	0	4	4
DeSoto	2	0	1	1	3	4	7
East Carroll	0	0	0	0	0	2	2
Franklin	0	0	0	0	0	1	1
Grant	1	0	1	0	1	0	1
LaSalle	0	0	0	0	1	2	3
Madison	0	0	0	0	0	2	2
Morehouse	9	0	4	5	2	5	7
Ouachita	0	0	0	0	4	8	12
Rapides	0	0	0	0	0	2	2
Red River	1	0	1	0	1	1	2
Richland	4	0	0	4	4	4	8
Sabine	1	0	1	0	1	2	3
Tensas	0	0	0	0	0	1	1
Union	2	0	1	1	3	6	9
Webster	8	30	4	3	6	12	18
Total Oct.	41	50	20	19	29	85	114
Total Sept.	30	380	23	12	34	82	116
Difference	11	330	3	7	5	3	2

*Gas production, in cubic feet: Bossier, 46,500,000; Caddo, 100,000; DeSoto, 500,000; Morehouse, 65,700,000; Richland, 162,000,000; Union, 12,000,000; Webster, 47,080,000; total, cubic feet, 333,880,000.

ARKANSAS

Summary of Field Operations

	Comp.	Prod.	Dry	*Gas	Rigs	Dlg.	Ttl.
Ashley	0	0	0	0	0	3	3
Calhoun	1	0	1	0	0	1	1
Chicot	1	0	1	0	0	4	4
Cleveland	1	0	1	0	0	0	0
Clark	0	0	0	0	0	2	2
Clay	0	0	0	0	0	1	1
Columbia	0	0	0	0	1	3	4
Faulkner	0	0	0	0	0	1	1
Franklin	0	0	0	0	0	1	1
Garland	0	0	0	0	0	1	1
Jackson	0	0	0	0	0	1	1
Johnson	2	0	0	0	0	2	2
Little River	0	0	0	0	0	1	1
Logan	0	0	0	0	0	2	2
Nevada	5	266	0	0	1	2	3
Ouachita	0	0	0	0	0	3	3
Pike	2	0	2	0	0	0	0
Union	30	2,507	17	4	18	27	45
Washington	0	0	0	0	0	2	2
White	0	0	0	0	0	1	1
Woodruff	0	0	0	0	0	1	1
Total Oct.	43	2,773	22	7	20	59	79
Total Sept.	36	1,474	16	4	27	73	100
Difference	7	1,299	6	3	7	14	21

Gas production in cubic feet: Johnson, 18,328,000; Union, 99,400,000; Total cubic feet 117,728,000.

EAST TEXAS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Bowie	0	0	0	0	0	1	1
Cass	0	0	0	0	0	1	1
Camp	0	0	0	0	0	1	1
Harrison	2	0	0	2	0	1	1
Panola	2	0	0	2	3	10	13
Red River	0	0	0	0	0	3	3
Shelby	0	0	0	0	0	2	2
Total Oct.	4	0	0	4	3	19	22
Total Sep.	8	6	3	4	4	7	11
Difference	4	6	3	0	1	12	11

Gas production in cubic feet: Harrison 2,072,000; Panola, 10,000,000; Total 12, 072,000 cubic feet

KENTUCKY-TENNESSEE

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Warren	3	9	0	0	0	5	5
Allen	7	10	4	0	0	8	8
Barren	1	30	0	0	0	10	10
Ohio	42	1,086	13	1	3	65	68
Daviess	50	2,092	9	0	4	36	40
Hancock	1	0	0	1	0	5	5
McLean	0	0	0	0	0	4	4
Henderson-Union	0	0	0	0	0	4	4
Webster	1	25	0	0	0	2	2
Simpson	0	0	0	0	0	1	1
Breckenridge	1	0	1	0	0	2	2
Butler	0	0	0	0	1	3	4
Hopkins	1	20	0	0	0	9	9
Muhlenburg	0	0	0	0	0	2	2
Meade	0	0	0	0	0	1	1
Caldwell	0	0	0	0	0	1	1
Trigg	0	0	0	0	0	1	1
Cumberland-Monroe	0	0	0	0	0	1	1
Christian	0	0	0	0	3	2	5
Metcalf	1	0	0	1	0	0	0
Hardin	0	0	0	0	0	1	1
Wayne	2	10	1	0	0	5	5
Estill	7	7	2	0	0	4	4
Powell	2	4	0	0	0	0	0
Wolfe	1	6	0	0	0	1	1
Johnson-Magoffin	1	0	1	0	1	2	3
Floyd-Knott	2	50	0	1	0	1	1
Clay	2	0	1	1	0	0	0
Knox	0	0	0	0	0	3	3
Breathitt	0	0	0	0	0	1	1
Total Oct.	125	3,353	32	5	12	180	192
Total Sept.	130	3,390	38	4	16	170	186
Difference	5	37	6	1	4	10	6

TENNESSEE

Summary of Field Operations

	Comp.	Prod.	Dry	Rigs	Dlg.	Ttl.
Clay	1	20	0	2	11	13
Jackson	1	50	0	0	2	2
Marshall	0	0	0	1	0	1
Decatur	0	0	0	1	0	1
Total Oct.	2	70	0	4	13	17
Total Sept.	5	165	0	4	14	18
Difference	3	95	0	0	1	1

NEW MEXICO

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Dlg	Ttl
Chaves	0	0	0	0	0	4	4
Curry	0	0	0	0	0	1	1
De Baca	0	0	0	0	1	2	3
Eddy	2	250	1	0	3	3	6
Guadalupe	0	0	0	0	0	2	2

(Continued on Next Page)

Lea	0	0	0	0	5	22	27
McKinley	0	0	0	0	2	10	12
San Juan	1	0	0	1	4	23	27
Torrance	0	0	0	0	1	5	6
Valencia	0	0	0	0	0	2	2
Miscellaneous	0	0	0	0	0	2	10	12
Total Oct.	3	250	1	1	18	84	102
Total Sept.	3	175	2	0	19	75	94
Difference	0	75	1	1	1	9	8

UTAH

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Dlg	Ttl
Box Elder	2	0	2	0	0	1	1
Grand	0	0	0	0	0	9	9
San Juan	0	0	0	0	0	2	2
Uinta	0	0	0	0	0	5	5
Washington	0	0	0	0	0	7	7
Miscellaneous	0	0	0	0	0	8	8
Total Oct.	2	0	2	0	0	32	32
Total Sept.	0	0	0	0	3	31	34
Difference	2	0	2	0	3	1	2

WYOMING

Summary of Field Operations

Dist. or County—	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Salt Creek	1	269	0	0	5	9	14
Big Horn	0	0	0	0	3	12	15
Carbon	0	0	0	0	0	15	15
Converse	0	0	0	0	1	4	5
Fremont	1	0	0	1	0	10	10
Goshen	1	0	1	0	0	0	0
Hot Springs	0	0	0	0	2	3	5
Johnson	0	0	0	0	0	4	4
Lincoln	0	0	0	0	1	5	6
*Natrona	2	0	0	2	5	1	6
Niobrara	1	0	1	0	2	4	6
Park	5	2,500	1	0	4	34	38
Sweetwater	0	0	0	0	4	8	12
Sublet	6	180	3	0	2	26	28
Weston	1	25	0	0	1	2	3
Uinta	2	530	0	0	5	10	15
Miscellaneous	0	0	0	0	1	4	5
Total Oct.	20	3,444	6	3	36	151	187
Total Sept.	14	5,579	0	1	27	129	156
Difference	6	2,135	6	2	9	22	31

*Except Salt Creek.

COLORADO

County—	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Bent	0	0	0	0	0	3	3
Fremont	7	677	3	0	3	17	20
Huerfano	0	0	0	0	0	2	2
Jackson	0	0	0	0	0	6	6
Jefferson	1	0	1	0	0	0	0
La Plata	0	0	0	0	1	2	3
Larimer	2	794	0	0	1	11	12
Las Animas	0	0	0	0	0	1	4	5
Moffat	4	1,060	3	0	6	10	16
Rio Blanco	1	0	1	0	0	1	1
Routt	3	85	0	0	3	5	8
Miscellaneous	0	0	0	0	0	23	23
Total Oct.	18	2,616	8	0	15	84	99
Total Sept.	6	960	5	0	13	86	99
Difference	12	1,656	3	0	2	2	0

EASTERN FIELDS

Summary of Completed Wells

Fields—	Comp.	Prod.	Dry	Gas
Allegany	47	130	0	1
Bradford	153	258	0	0
Middle Field	11	34	0	1
Venango-Clarion	47	42	6	11
Butler-Armstrong	19	31	4	2
Southwest Pa.	13	29	1	7
West Virginia	60	209	7	31
Southeast Ohio	65	1,010	10	14
Total Oct.	415	1,743	28	67
Total Sept.	428	1,846	33	53
Difference	13	103	5	14

Summary of Work Under Way

	Rigs	Drlg.	Ttl.
Allegany	10	44	54
Bradford	23	66	89
Middle Field	0	14	14
Venango-Clarion	0	12	12
Butler-Armstrong	3	11	14
Southwest Pennsylvania	9	24	33
West Virginia	40	101	141
Southeast Ohio	24	99	123
Total Oct.	109	371	480
Total Sept.	97	351	448
Difference	12	20	32

LIMA FIELD

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Wood	5	41	0	0	3	1	4
Hancock	1	36	0	0	0	3	3
Allen	5	140	0	0	0	2	2
Auglaize	3	27	1	0	0	4	4
Mercer	1	10	0	0	0	3	3
Van Wert	0	0	0	0	1	0	1
Seneca	10	180	6	1	0	7	7
Ottawa	0	0	0	0	0	1	1
Shelby	0	0	0	0	0	1	1
Hardin	1	0	0	1	1	1	2
Darke	0	0	0	0	0	2	2
Wyandot	1	0	1	0	1	0	1
Huron	0	0	0	0	0	1	1
Total Oct.	27	428	8	2	6	26	32
Total Sept.	29	633	14	0	5	37	42
Difference	2	205	6	2	1	11	10

CENTRAL OHIO

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Ashland	12	28	2	5	10	19	29
Medina	4	0	2	2	4	5	9
Lorain	2	0	0	2	5	5	10
Wayne	8	0	4	4	6	7	13
Holmes	7	77	1	4	3	9	12
Cuyahoga	2	10	0	1	0	5	5
Richland	0	0	0	0	1	2	3
Knox	6	114	1	4	6	6	12
Coshocton	4	138	0	2	3	4	7
Summitt	9	0	1	8	0	11	11
Licking	18	166	5	2	13	15	28
Muskingum	6	65	2	3	11	9	20
Athens	16	10	3	11	14	19	33
Meigs	8	22	1	1	5	16	21
Jackson	4	0	1	3	9	11	20
Vinton	2	4	1	0	0	0	0
Stark	1	0	1	0	1	2	3
Lawrence	0	0	0	0	0	3	3
Gallia	2	0	0	2	0	1	1
Tuscarawas	1	0	1	0	0	1	1
Fairfield	1	0	0	1	0	4	4
Total Oct.	113	634	26	55	91	154	245
Total Sept.	113	407	35	54	75	148	223
Difference	0	227	9	1	16	6	22

ILLINOIS FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Clark	0	0	0	0	0	2	2
Cumberland	0	0	0	0	0	1	1
Crawford	13	134	4	3	2	2	4
Lawrence	1	25	0	0	0	3	3
Wabash	6	175	4	0	0	6	6
Jefferson	1	0	1	0	0	0	0
St. Clair	1	0	1	0	0	0	0
Macon	0	0	0	0	0	1	1
Madison	0	0	0	0	0	1	1
Shelby	0	0	0	0	0	1	1
Marion	0	0	0	0	0	1	1
Total Oct.	22	334	10	3	2	18	20
Total Sept.	17	428	6	0	3	19	22
Difference	5	94	4	3	1	1	2

INDIANA

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Wells	0	0	0	0	0	1	1
Jay	1	0	1	0	0	1	1
Adams	1	5	0	0	0	1	1
Grant	0	0	0	0	0	1	1
Huntington	0	0	0	0	0	1	1
Gibson	3	10	1	1	1	7	8
Pike	0	0	0	0	1	4	5
Daviess	0	0	0	0	0	2	2
Vigo	3	70	1	0	0	4	4
Sullivan	0	0	0	0	0	7	7
Dubois	0	0	0	0	0	2	2
Warrick	1	0	0	1	0	2	2
Spencer	2	10	1	0	1	6	7
Knox	0	0	0	0	0	1	1
Benton	0	0	0	0	0	1	1
Fountain	0	0	0	0	0	1	1
Monroe	0	0	0	0	0	1	1
Batholomew	0	0	0	0	0	1	1
Miami	0	0	0	0	0	1	1
Montgomery	0	0	0	0	0	1	1
Wabash	0	0	0	0	0	1	1
Greene	0	0	0	0	0	1	1
Henry	0	0	0	0	0	1	1
Allen	1	0	1	0	0	0	0
Madison	0	0	0	0	0	2	2
Hancock	0	0	0	0	0	1	1
Crawford	0	0	0	0	0	2	2
Perry	0	0	0	0	1	1	2
Marshall	1	0	1	0	0	0	0
Posey	0	0	0	0	0	1	1
Rush	3	0	0	3	0	0	0
Vandeburg	0	0	0	0	0	2	2
Steuben	0	0	0	0	0	1	1
Pulaski	0	0	0	0	0	1	1
Harrison	1	0	0	1	0	2	2
Lagrange	0	0	0	0	0	1	1
Total Oct.	17	95	6	6	4	63	67
Total Sept.	26	272	11	8	2	56	58
Difference	9	177	5	2	2	7	9

MICHIGAN

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Muskegon	20	2,765	3	9	22	43	65
Midland	0	0	0	0	0	3	3
Gratiot	0	0	0	0	1	0	1
Monroe	0	0	0	0	0	1	1
Shaawasse	0	0	0	0	0	1	1
Crawford	0	0	0	0	0	1	1
Montcalm	0	0	0	0	1	0	1
Sanilac	0	0	0	0	0	1	1
Isabella	0	0	0	0	0	2	2
Newyago	0	0	0	0	3	1	4
St. Clair	0	0	0	0	0	4	4
Oakland	0	0	0	0	1	0	1
Van Buren	0	0	0	0	2	1	3
Alpena	0	0	0	0	0	1	1
Livingstone	0	0	0	0	0	2	2
Lapeer	0	0	0	0	1	0	1
Allegan	0	0	0	0	1	0	1
Tuscola	0	0	0	0	0	1	1
Mason	0	0	0	0	0	1	1
Huron	0	0	0	0	0	1	1
Manistee	0	0	0	0	1	0	1
Cass	0	0	0	0	0	1	1
Kent	0	0	0	0	1	1	2
Ottawa	0	0	0	0	0	2	2
Oceana	0	0	0	0	1	0	1
Total Oct.	20	2,765	3	9	35	68	103
Total Sept.	14	210	2	7	21	58	79
Difference	6	2,555	1	2	14	10	24

PANHANDLE FIELDS

(Continued from Page 43)

at 990 feet. Paull Oil Co.'s No. 4 Allen made 310 bbls. at 2,085-2,120 feet. Paull Oil Co.'s No. 2 Thompson made 125 bbls. at 2,065-85 feet.

RANGER DISTRICT
Week Ended November 3, 1928

Brown County

Cranfill & Reynolds' No. 16 Eubanks made 75 bbls. at 1,206-11 feet. Humble Oil & Refining Co.'s No. 25 Hickman was shot with 60 quarts and 20 quarts at 1,255-60 feet and made 8 bbls. Milham Corp.'s No. 5 Rosser was shot with 3 quarts at 1,308-21 feet and made 30 bbls. Pandem Oil Co.'s No. 1 Gilman was dry and abandoned at 1,270 feet. Phillips Petroleum Corp.'s No. 16 Hickman made 100 bbls. after having been shot with 4 quarts at 1,270-74 feet and 7 quarts at 1,264-74 feet.

Callahan County

Montray Oil Co.'s No. 1 Hatchett was dry and abandoned at 375 feet. The Texas Company's No. 4 Hatchett made 15 bbls. at 339-50 feet.

Coleman County

National Refining Co.'s No. 1 Farrell was dry and abandoned at 2,501 feet. Texas Syndicate's No. 1 Crawford was temporarily abandoned at 2,005 feet. Texas Production Co.'s No. 1 Gates was dry and abandoned at 2,352 feet.

Eastland County

Chestnut & Smith Corp.'s No. 2 Brasher was dry and abandoned at 3,620 feet. Goodwin & Lewis' No. 1 Bourland topped the Ellenberger lime at 3,591 feet and was dry and abandoned at 3,625 feet. Hoffman & Page's No. 1 Downtain was dry and abandoned at 1,570 feet. Their No. 2 Foster was shot with 10 quarts at 1,262-77 feet and made 22 bbls. Stalker Oil Co.'s No. 1 Holcomb made 4,000,000 feet of gas at 1,590-92 feet. T. P. Coal & Oil Co.'s No. 1-B Allen was dry and abandoned at 807 feet.

Palo Pinto County

Shaw's No. 1 Gilbert was temporarily abandoned at 4,140 feet.

Shackleford County

James' No. 11 Moberly made 6 bbls. at 988-92 feet. Rosser & Pendleton Inc.'s No. 82-A-60 Cook made 25 bbls. at 1,153-75 feet. Their No. 20-A-61 Cook made 50 bbls. at 1,340-54 feet. Their No. 22-A-61 Cook made 50 bbls. at 1,284-1,308 feet. Their No. 8-A-62 Cook made 100 bbls. at 1,346-64 feet. Their No. 43-C-60 Cook made 30 bbls. at 1,198-1,218 feet. Tannehill Oil Co.'s No. 11-59 Moberly made 1,000,000 feet of dry gas at 978-94 feet and was dry and abandoned at 1,150 feet. Wentz Oil Corp.'s No. 1-A Matthews was dry and abandoned at 1,148-57 feet.

Stephens County

Pace & Ward's No. 2 Sloan made 2,250,000 feet of gas and 12 bbls. at 3,312-50 feet. Leisner & Snebald's No. 1 Guest was drilled to a total depth of 2,307 feet, plugged back to 2,121 feet, shot with 20 quarts at 2,108-21 feet with no results, plugged back again to 2,075-80 feet and shot with 20 quarts and had an initial production of 500,000 feet of gas.

PANHANDLE COMPLETIONS
Week Ended November 3, 1928

Carson County

Empire Gas & Fuel Co.'s No. 1 Crutchfield, 1,320 feet from south and west lines, Section 28, Block 4, I.&G.N. Survey, made 14,000,000 feet of gas at 2,405-2,685 feet.

Hutchinson County

Phillips Petroleum Co.'s No. 4 Johnson Brothers (Barnum) was shot with 110 quarts at 2,891-2,931 feet and made 200 bbls.

Gray County

Shamrock's No. 1 Dial, 330 feet south and east of NW cor. Section 49, Block 25, I.&G.N.R.R. Survey, was dry and abandoned at 3,350 feet. The Texas Company's No. 3 J. E. Williams, 257 feet from west line and 325 feet from north line, Section 6, Block 1, A.C.H.&B. Survey, was shot with 300 quarts at 2,740-2,821 feet and swabbed 35 bbls. Landreth Production Co.'s No. 1 Langham, SE cor east 79 acres of N half or Section 1 Block 2 H.&G.N.R.R. Survey, was shot with 80 quarts at 2,688-2,786 feet and flowed 130 bbls. Prairie Oil & Gas Co.'s No. 2 Harrah, 990 feet from north line and 330 feet from east line of NE 80 acres of Section 163, Block 2 I.&G.N. Survey, swabbed 55 bbls. at 3,185-3,250 feet. Skelly Oil Co.'s No. 1 B. Bull, 257 feet from east line and 267 feet from south line of SE 160 acres in Section 2, Block B-2, H.&G.N. Survey, encountered water at 2,800 feet, plugged back to 2,700 feet and flowed 82 bbls. from granite wash at 2,614-40 feet with 8,000,000 feet of gas.

FORT WORTH GEOLOGISTS PLAN FOR CONVENTION

B. E. Thompson, president, and C. E. Yeager, secretary, of the Fort Worth Geological Society, have selected the following committees to prepare for the annual meeting of the American Association of Petroleum Geologists to be held in Fort Worth March 21-23.:

General Committee—J. Elmer Thomas, chairman; J. H. Jenkins, R. A. Liddle, J. Earle Brown, C. P. Watson, Ford Bradish, H. B. Fuqua, David Donohue, B. E. Thompson.

Finance—J. H. Jenkins, chairman; Bent C. Belt, C. E. Hyde, J. Elmer Thomas.

Program—R. A. Liddle, chairman; Roger Denison, Paul Applin, R. H. Fash, M. G. Cheney.

Entertainment—J. Earle Brown, chairman; R. R. Thompson, V. C. Perini, Paul Buttermore.

Publicity — Ford Bradish, chairman; N. B. Livingston, R. J. Metcalf, A. Bruyere.

Reception—H. B. Fuqua, chairman; Roy Reynolds, C. S. Miller.

Visiting Ladies—C. P. Watson, chairman.

Registration—David Donohue, chairman; E. B. Stiles, W. W. Patrick.

Arrangements—B. E. Thompson, chairman; Claude Dally, C. E. Yeager.

A.S.M.E. MEETING

The first meeting of the winter season of the Mid-Continent section of the American Society of Mechanical Engineers will be held at the Tulsa Club, Tulsa, Friday evening, November 9. Two motion pictures of especial interest to engineers will be shown at the meeting. William G. Heltzel of the Sinclair Pipe Line Co. is chairman of the section.

OIL SECURITIES IN ADVANCING MARKET

(Continued from Page 133)

Vigas concession in Venezuela. The stock will be distributed to Carib shareholders of record November 10 on a share-for-share basis.

After this distribution has been made, the main assets of the Carib Syndicate will be its Colombian holdings, consisting of controling interest in the Equatorial Oil Co. and equities in the Honda Leaseholds and the Colombian Petroleum Co., the latter being a holding company connected with the Barco concession properties.

Dordtsche Petroleum

Dordtsche Petroleum Industrie, a subsidiary of Royal Dutch, has declared an interim dividend of 10 per cent. The company controls distribution of petroleum in Holland.

OIL BONDS ON THE NEW YORK CURB
Quotations Compiled by Francis, Bro. & Co., Members New York Stock Exchange
Kennedy Bldg., Tulsa, Okla.

Amount outstanding	Company—	Date	Pct.	Int.	For week ended Nov. 3— Sales	High	Low	Close
11,603,000	American Nat. Gas Co.	Oct.	1942	6½	A&O			
3,000,000	Beacon Oil Co.	Nov.	1936	6	M&N	7,800	112½	110⅜	110¾
18,900,000	Cities Service deb.	Jan.	1966	5	M&N				
15,000,000	Cities Serv. refunding deb.	Jan.	1966	5	M&S	7,900	93½	97½	93½
24,843,700	Cities Service Gas Co.	May	1942	5½	M&N	7,400	93⅝	93⅝	93½
12,000,000	Cities Service Gas P. L. Co.	Jan.	1943	6	J&J	6,500	99⅜	99	99¼
12,000,000	Continental Oil Co.	Nov.	1937	5¼	M&N	1,400	96⅛	95	95
3,000,000	Dixie Gulf Gas Co. A	Sept.	1937	6½	M&S				
18,000,000	Empire Oil & Ref. Co.	Apr.	1942	5½	A&O	11,000	93	92¼	92¾
3,877,100	Galena Signal Oil Co.	Apr.	1930	7	A&O	6,800	100⅜	100⅝	100⅜
30,904,000	Gulf Oil of Pa.	Dec.	1937	5	J&D	1,500	100⅝	100¼	100¾
12,000,000	Gulf Oil of Pa. debs.	Feb.	1947	5	F&A	1,400	100⅜	100½	100⅜
4,000,000	Houston Gulf Gas	Apr.	1943	6	A&O	2,100	96	95½	96
4,000,000	Houston Gulf Gas	Apr.	1943	6½	A&O	2,000	94¾	94	94⅜
6,339,000	Independent Oil & Gas	Mar.	1939	6	M&S	16,000	109	106¼	109
15,000,000	Lone Star Gas Co.	May	1942	5	M&N	400	98¾	98¾	98¾
11,650,000	Richfield Oil Co.	Sept.	1941	6	M&S				
1,427,000	Richfield Oil Co.	Jan.	1931	5½	J&L	2,300	102½	102	102
9,733,000	Sun Oil Co.		1939	5½	M&S	1,500	101½	101	101¼
4,000,000	Transcontinental Oil Co.	Apr.	1930	7	A&O				
2,500,000	Warner-Quinlan Oil Co.		1942	6	A&O	25,000	117¾	111¼	115

PETROLEUM, PETROLEUM PRODUCTS, AND NATURAL GASOLINE, SEPTEMBER, 1928

According to reports received by the Bureau of Mines, Department of Commerce, from companies which operate gathering or lead lines, the production of crude petroleum in the United States during September, 1928, amounted to 76,404,000 bbls. This represents a daily average of 2,547,000 bbls., an increase over August of 36,000 bbls. and over September, 1927, of 17,000 bbls. As was the case in August, the major portion of the increased output came from the South Little River and St. Louis Pools of Oklahoma. The daily average production of Oklahoma rose to a new high level of 759,000 bbls., the result both of new flush production and increased output from the older fields of the State. Daily average production in the two other leading states, Texas and California, showed little change in September. All of the remaining producing states registered declines in daily output in September.

As was the case in August, stocks of crude petroleum in the Mid-Continent district increased slightly in September, but this was more than counterbalanced by withdrawals in other districts. The largest withdrawals took place in refinery stocks which declined during the month from 42,454,000 to 40,497,000 bbls. The total decline in crude stocks east of California was 2,001,000 bbls. Stocks of high crude in California were reduced to a new low level of 16,870,000 bbls. but stocks of heavy crude increased.

Total stocks of all oils decreased 2,421,000 bbls. in September, 1928, as compared with an increase of 1,521,000 bbls. in September, 1927. However, the total for stocks of all oils on September 30, 1928, was 607,173,000 bbls. as compared with 575,222,000 bbls. on hand the previous year.

Refined Products

For the eighth successive month, runs to stills established a new record in September, when the daily average throughput of crude petroleum was 2,660,000 bbls. This figure includes the daily throughput of foreign crude petroleum, 237,000 bbls., the highest for any month since July, 1922.

Daily gasoline production also reached a new high level. September representing the eighth successive month in which this has occurred. The major portion of the increased production of gasoline resulted from the increased throughput recorded above, although an increase in cracking also had a material effect. September marked the turning point in the indicated domestic demand for gasoline, which decreased for the first time since January, 1928. Exports were heavy and stocks were again drawn on, though not to the extent of the past few months. Total stocks of gasoline at refineries on September 30, 1928, totaled 26,405,000 bbls., which, at the current rate of total demand, represents 23 days' supply as compared with 22 days' supply on hand a month ago and 28 days' supply on hand a year ago.

Exports of kerosene increased materially in September and stocks were reduced. Stocks of fuel oil east of California continued to increase, though at a much reduced rate as compared with the past few months. Stocks of wax increased, but on September 30, 1928, were considerably less than they were the previous year.

The refinery data of this report were compiled from schedules of 334 refineries, which had an aggregate daily crude oil capacity of 3,184,000 bbls. These refineries operated during September at 84 per cent of their recorded capacity as compared with 334 refineries operating at 83 per cent of their recorded capacity in August.

Statistics of Important Fields

The center of interest from the standpoint of flush fields was again focused on the greater Seminole district and on the operations in the St. Louis Pool of Pottawatomie County to the west. The output of the Seminole district averaged 347,000 bbls. daily during September, 1928, as compared with a daily average production of 301,000 bbls. in August. Practically all of this increase came from the South Little River Pool, which was opened up on August 15 and was the center of drilling activity in September.

The daily average output in each of the three important producing areas—West Texas, Long Beach and the Panhandle—was practically unchanged in September. West Texas continued to establish new records in the size of its completions but at the same time continued to have comparatively greater success in regulating its output.

Stocks of both producers' and tank farm stocks of oil in the Seminole Field increased slightly in September. In general, the new flush production in the Little River Pool found a much more ready market than has occurred in some time.

PRODUCTION AND GRAVITY
(Barrels of 42 U. S. gallons.)

	September, 1928		August, 1928		Sept., 1927		Average
	Total	Daily av.	Total	Daily av.	Total	Daily av.	gravity
Seminole	10,401,000	347,000	*9,325,000	301,000	13,170,000	439,000	41.0
St. Louis-Pearson	3,312,000	110,000	2,566,000	83,000	.....	.....	40.0
Panhandle	1,912,000	64,000	1,939,000	63,000	2,883,000	96,000	36.0
West Texas	10,850,000	362,000	11,329,000	365,000	5,326,000	178,000	30.0
Long Beach	5,940,000	198,000	5,918,000	191,000	2,705,000	90,000	26.0

ANALYSIS OF SUPPLY AND DEMAND OF ALL OILS (ALL DATA PRELIMINARY)
(Including wax, coke and asphalt in thousands of barrels of 42 U. S. gallons.)

NEW SUPPLY:	September, 1928	August, 1928	Sept., 1927	Jan.-Sept., 1928	Jan.-Sept., 1927*
Domestic production:					
Crude petroleum:					
Light	69,081	70,090	66,911	595,152	588,206
Heavy	7,323	7,739	8,998	69,795	85,945
Total crude	76,404	77,829	75,909	664,947	674,151
Natural gasoline	3,452	3,421	3,245	30,614	28,412
Benzol	231	233	210	2,071	1,928
Total	80,087	81,483	79,364	697,632	704,491
Daily average	2,670	2,628	2,645	2,546	2,581
Excess of daily average domestic production over domestic demand	88	99	216	260	391
Imports:					
Crude	7,140	6,141	5,122	59,165	42,201
Refined	598	1,007	868	9,295	10,396
Total new supply all oils	87,825	88,631	85,354	766,092	757,088
Daily average	2,928	2,859	2,845	2,796	2,773
Change in stocks all oils	†2,421	†2,458	1,521	20,584	54,086
DEMAND:					
Total demand	90,246	91,089	83,833	745,508	703,002
Daily average	3,008	2,938	2,794	2,721	2,575
Exports:‡					
Crude	1,505	1,883	1,297	13,737	11,307
Refined	11,285	10,816	9,652	105,445	93,746
Domestic demand	77,456	78,390	72,884	626,326	597,949
Daily average	2,582	2,529	2,429	2,286	2,190
STOCKS (end of month):					
Crude:					
East of California:§					
Light	317,164	317,438	290,851	317,164	290,851
Heavy	49,488	51,215	48,621	49,488	48,621
California:					
Light	16,870	18,310	22,826	16,870	22,826
Heavy¶	96,563	95,057	93,820	96,563	93,820
Total crude	480,085	482,020	456,118	480,085	456,118
Natural gasoline at plants	436	414	736	436	736
Refined products	126,652	127,160	118,368	126,652	118,368
Grand total stocks all oils	607,173	609,594	575,222	607,173	575,222
Days' supply‖	202	207	206	223	223
Bunker oil (included above in domestic demand)	4,051	4,564	4,436	38,096	37,083

*Final figures. †Decrease. ‡Includes shipment to noncontiguous territories. §Exclusive of producers' stocks. ¶Includes fuel oil. ‖Grand total stocks divided by daily average total demand.

STOCKS AT SEMINOLE
(Barrels of 42 U. S. gallons.)

	Sept., 1928	August, 1928	Sept., 1927
Producers' stocks	475,000	438,000	466,000
Tank farm stocks	17,368,000	17,258,000	11,852,000
Total stocks	17,843,000	17,696,000	12,318,000

RECORD OF WELLS, SEPTEMBER, 1928

	Completions			Total initial prod. (bbls.)	Aver. initial prod. (bbls.)	Drilling Sept. 30
	Oil	Gas	Dry			
Seminole	68	2	13	132,200	1,900	191
St. Louis-Pearson*	27	1	3	68,400	2,500	152
Panhandle	12	6	4	2,400	200	125
West Texas	91	..	21	839,800	9,200	344
Long Beach	21	..	2	41,000	2,000	157

*Represents wells in Pottawatomie County as reported by The Oil and Gas Journal.

PRODUCTION OF CRUDE PETROLEUM BY FIELDS AND STATES WITH CLASSIFICATION BY GRAVITY
(Barrels of 42 U. S. gallons)

FIELD:	September, 1928 Total	September, 1928 Daily av.	August, 1928 Total	August, 1928 Daily av.	Jan.-Sept., 1928	Jan.-Sept., 1927*
Appalachian	2,474,000	82,400	2,719,000	87,700	23,115,000	22,903,000
Lima-Indiana	130,000	4,300	145,000	4,700	1,295,000	1,422,000
Michigan	37,000	1,200	46,000	1,500	363,000	335,000
Ill.-S. W. Ind.	588,000	19,600	659,000	21,300	5,581,000	5,874,000
Mid-Continent	48,089,000	1,603,000	48,194,000	1,554,600	407,770,000	406,522,000
Gulf Coast	3,770,000	125,700	4,062,000	131,000	33,936,000	39,615,000
Rocky Mountain	2,408,000	80,300	2,559,000	82,500	21,819,000	†23,387,000
California	18,908,000	630,300	19,445,000	627,300	171,068,000	174,093,000
Total U. S.	76,404,000	2,546,800	77,829,000	2,510,600	664,947,000	674,151,000
STATE:						
Arkansas	2,574,000	85,800	2,754,000	88,800	24,451,000	21,095,000
California	18,908,000	630,300	19,445,000	627,300	171,068,000	174,093,000
Colorado	208,000	6,900	240,000	7,700	2,069,000	2,168,000
Illinois	506,000	16,900	572,000	18,500	4,882,000	5,344,000
Indiana	89,000	2,900	95,000	3,100	769,000	631,000
Southwestern	82,000	2,700	87,000	2,800	699,000	530,000
Northeastern	7,000	200	8,000	300	70,000	101,000
Kansas	2,828,000	94,300	3,180,000	102,500	29,524,000	31,073,000
Kentucky	594,000	19,800	660,000	21,300	5,461,000	4,990,000
Louisiana	1,760,000	58,700	1,993,000	64,300	16,496,000	17,247,000
Gulf Coast	626,000	20,900	776,000	25,000	5,035,000	3,752,000
Rest of State	1,134,000	37,800	1,217,000	39,300	11,461,000	13,495,000
Michigan	37,000	1,200	46,000	1,500	363,000	335,000
Montana	322,000	10,800	338,000	10,900	2,986,000	3,944,000
New Mexico	67,000	2,200	84,000	2,700	672,000	1,000,000
New York	214,000	7,100	223,000	7,200	1,840,000	1,674,000
Ohio	540,000	18,000	611,000	19,700	5,362,000	5,802,000
Cent. & East.	417,000	13,900	474,000	15,300	4,137,000	4,481,000
Northwestern	123,000	4,100	137,000	4,400	1,225,000	1,321,000
Oklahoma	22,775,000	759,200	21,420,000	691,000	180,785,000	206,822,000
Osage County	1,431,000	47,700	1,561,000	50,400	15,352,000	18,194,000
Rest of State	21,344,000	711,500	19,859,000	640,600	165,433,000	188,628,000
Pennsylvania	797,000	26,600	860,000	27,700	7,330,000	7,147,000
Tennessee	4,000	100	300	10	41,000	44,000
Texas	21,922,000	730,700	22,909,000	739,000	190,450,000	159,900,000
Gulf Coast	3,144,000	104,800	3,286,000	106,000	28,901,000	35,863,000
Rest of State	18,778,000	625,900	19,623,000	633,000	161,549,000	124,037,000
West Virginia	448,000	14,900	493,000	15,900	4,306,000	4,567,000
Wyoming	1,811,000	60,400	1,897,000	61,200	16,092,000	16,269,000
Salt Creek	1,154,000	38,500	1,198,000	38,600	10,804,000	11,104,000
Rest of State	657,000	21,900	699,000	22,600	5,288,000	5,165,000
CLASSIFICATION BY GRAVITY (Approx.):						
Light crude	69,081,000	2,302,700	70,090,000	2,261,000	595,152,000	588,206,000
Heavy crude	7,323,000	244,100	7,739,000	249,600	69,795,000	85,945,000

*Final figures. Includes approximately 2,950,000 bbls. consumed on leases, etc., not included in 1928 preliminary figures. †Including Alaska.

STOCKS OF CRUDE PETROLEUM HELD IN THE UNITED STATES (Barrels)

		September 30, 1928	August 31, 1928	September 30, 1927*
AT REFINERIES (and in coastwise transit thereto). Reported by location of storage:				
East Coast: Domestic		7,955,000	8,991,000	9,062,000
Foreign		3,964,000	4,946,000	2,986,000
Appalachian		2,185,000	2,258,000	1,768,000
Indiana, Illinois, etc.		2,759,000	2,891,000	2,727,000
Oklahoma, Kansas, etc.		5,247,000	5,208,000	4,536,000
Texas: Inland		1,767,000	1,926,000	1,621,000
Gulf Coast: Domestic		8,189,000	7,814,000	7,295,000
Foreign		128,000	54,000	204,000
Arkansas and Inland Louisiana		852,000	882,000	355,000
Louisiana Gulf Coast: Domestic		4,656,000	4,690,000	5,130,000
Foreign		1,117,000	1,049,000	1,083,000
Rocky Mountain		1,680,000	1,545,000	1,446,000
Total east of California		40,499,000	42,254,000	38,213,000
ELSEWHERE THAN AT REFINERIES:				
Domestic—Reported by field of origin:				
Appalachian:				
N. Y., Pa., W. Va., Eastern and Central Ohio:	Gross	5,761,000	6,055,000	7,051,000
	Net	5,445,000	5,752,000	6,726,000
Kentucky:	Gross	999,000	1,166,000	1,269,000
	Net	846,000	1,041,000	1,139,000
Lima-Indiana:	Gross	1,529,000	1,528,000	1,159,000
	Net	1,346,000	1,348,000	1,006,000
Illinois-S. W. Indiana:	Gross	12,195,000	12,570,000	12,639,000
	Net	11,527,000	11,909,000	12,113,000
Mid-Continent:				
Oklahoma; Kansas; Central, North, and West Texas:	Gross	248,438,000	248,130,000	219,649,000
	Net	236,179,000	235,623,000	207,592,000
Northern Louisiana and Arkansas:	Gross	28,785,000	29,247,000	29,393,000
	Net	26,017,000	26,134,000	26,641,000
Gulf Coast:	Gross	18,786,000	18,298,000	18,661,000
	Net	18,299,000	17,807,000	18,223,000
Rocky Mountain:	Gross	26,335,000	26,738,000	27,647,000
	Net	26,297,000	26,700,000	27,599,000
Total pipe line and tank farm stocks east of California:	Gross	342,828,000	343,732,000	317,468,000
	Net	325,956,000	326,314,000	301,033,000
Foreign crude petroleum on Atlantic Coast		43,000	23,000	37,000
Foreign crude petroleum on Gulf Coast		154,000	62,000	183,000
Total		197,000	85,000	220,000
TOTAL refinery, pipe line, and tank farm stocks of domestic and foreign crude petroleum east of California		366,652,000	368,653,000	339,472,000
CLASSIFICATION BY GRAVITY (approx.):				
East of California:				
Light crude (24 degrees and above)		317,164,000	317,438,000	290,851,000
Heavy crude (below 24 degrees)		49,488,000	51,215,000	48,621,000
California: Light		16,870,000	18,310,000	22,826,000
Heavy (including fuel)		96,563,000	95,057,000	93,820,000

*Final figures.

IMPORTS AND EXPORTS OF CRUDE PETROLEUM (Barrels)
(From Bureau of Foreign and Domestic Commerce)

	September, 1928 Total	September, 1928 Daily av.	August, 1928 Total	August, 1928 Daily av.	Jan.-Sept., 1928	Jan.-Sept., 1927†
Imports	7,140,000	238,000	6,141,000	198,100	59,165,000	42,201,000
From Mexico	1,578,000	52,600	1,366,000	44,100	12,786,000	21,325,000
From Venezuela	4,347,000	144,900	3,600,000	116,100	34,704,000	13,041,000
From Colombia	1,086,000	36,200	807,000	26,000	9,528,000	5,363,000
From other countries	129,000	4,300	368,000	11,900	2,147,000	2,472,000
Exports:*	1,502,000	50,100	1,883,000	60,700	13,728,000	11,307,000
Domestic crude oil:						
To Canada	1,272,000	42,400	1,723,000	55,600	11,171,000	9,355,000
To other countries	230,000	7,700	160,000	5,100	2,556,000	1,952,000
Foreign crude oil	.....	.....	.....	.....	1,000	.....

*Crude shipments to Hawaii during September, 3,000 bbls. †Final figures.

(Continued on Next Page)

INDICATED DELIVERIES OF CRUDE PETROLEUM, EXCLUSIVE OF CALIFORNIA GRADES, TO DOMESTIC CONSUMERS (Barrels)

	September, 1928 Total	September, 1928 Daily av.	August, 1928 Total	August, 1928 Daily av.	Jan.-Sept., 1928	Jan.-Sept., 1927*
Domestic petroleum by fields of origin:						
Appalachian	2,976,000	99,200	3,007,000	97,000	24,158,000	22,832,000
Lima-Indiana	132,000	4,400	130,000	4,200	1,083,000	1,081,000
Michigan	37,000	1,200	46,000	1,500	363,000	331,000
Ill. & S. W. Ind.	970,000	32,300	799,000	25,800	6,224,000	5,530,000
Mid-Continent	47,650,000	1,588,300	48,022,000	1,549,100	392,413,000	344,912,000
Gulf Coast	3,278,000	109,300	3,490,000	112,600	33,559,000	41,648,000
Rocky Mountain	2,811,000	93,700	2,808,000	90,500	22,760,000	23,956,000
Deliveries and exports	57,854,000	1,928,400	58,302,000	1,880,700	480,560,000	440,290,000
Deliveries	56,847,000	1,894,900	56,788,000	1,831,900	471,152,000	432,905,000
Foreign petroleum	7,028,000	234,300	6,138,000	198,000	59,051,000	42,590,000
Deliveries of domestic and foreign petroleum	63,875,000	2,129,200	62,926,000	2,029,900	530,203,000	475,495,000

*Final figures.

NUMBER OF PRODUCING OIL WELLS COMPLETED*

September, 928	August, 1928	Jan.-Sept., 1928	Jan.-Sept., 1927†
1,192	1,247	9,062	11,498

*For States east of California, from The Oil and Gas Journal; for California, from the American Petroleum Institute. †Final figures.

SHIPMENTS OF CALIFORNIA OIL THROUGH PANAMA CANAL TO EASTERN PORTS IN UNITED STATES (Barrels)

	September, 1928	August, 1928	Jan.-Sept., 1928	Jan.-Sept., 1927*
Crude oil	100,000	162,000	2,153,000	8,098,000
Refined products	1,376,000	1,963,000	14,865,000	18,494,000
Gasoline	1,269,000	1,700,000	12,003,000	8,818,000
Tops	.....	88,000	183,000	.....
Gas oil	79,000	165,000	1,688,000	2,949,000
Fuel oil	2,000	2,000	715,000	6,500,000
Lubricants	24,000	5,000	256,000	215,000
Asphalt	2,000	3,000	20,000	12,000

*Final figures.

COMPARATIVE ANALYSES

(Thousands of barrels of 42 U. S. gallons)

	Production* Total	Production* Dly. av.	Imports† Total	Imports† Dly. av.	Exports‡ Total	Exports‡ Dly. av.	Stocks end of period	Dom. demand§ Total	Dom. demand§ Dly. av.
CRUDE PETROLEUM:									
September, 1928	79,810	2,660	7,140	238	1,505	50	‡383,522	.....	....
August, 1928	81,582	2,632	6,141	198	1,883	61	‡386,963	.....	....
Jan.-Sept., 1928	673,981	2,460	59,165	216	13,737	50	‡383,522	.....	....
September, 1927	68,532	2,284	5,122	171	1,297	43	‡362,298	.....	....
Jan.-Sept., 1927	615,815	2,256	42,201	155	11,307	41	‡362,298	.....	....
GASOLINE:									
September, 1928	33,543	1,118	193	6	4,837	161	26,405	29,691	990
August, 1928	34,037	1,098	479	15	4,563	147	27,197	33,148	1,069
Jan.-Sept., 1928	275,195	1,004	3,184	12	41,268	151	26,405	243,044	887
September, 1927	27,708	924	515	17	3,540	118	29,775	28,400	947
Jan.-Sept., 1927	244,331	895	3,938	14	33,544	123	29,775	223,973	820
KEROSENE:									
September, 1928	5,037	168	....	...	2,090	70	8,593	3,276	109
August, 1928	5,389	174	2	...	1,678	54	8,922	3,261	105
Jan.-Sept., 1928	45,092	165	129	...	16,979	62	8,593	27,364	100
September, 1927	4,686	156	....	...	1,659	55	8,523	3,198	107
Jan.-Sept., 1927	41,537	152	12	...	14,251	52	8,523	27,350	100
GAS OIL AND FUEL OIL:									
September, 1928	37,059	1,235	397	13	3,226	108	‡136,630	.....	....
August, 1928	37,449	1,208	515	17	3,420	110	‡134,818	.....	....
Jan.-Sept., 1928	313,777	1,145	5,430	20	34,532	126	‡136,630	.....	....
September, 1927	32,295	1,077	341	11	3,258	109	‡125,451	.....	....
Jan.-Sept., 1927	292,355	1,071	6,301	23	35,322	129	‡125,451	.....	....
LUBRICANTS:									
September, 1928	2,833	94	1	...	808	27	7,764	1,973	66
August, 1928	2,891	93	1	...	813	26	7,711	2,035	66
Jan.-Sept., 1928	25,968	95	8	...	8,513	31	7,764	17,559	64
September, 1927	2,782	93	....	...	861	29	7,447	1,965	66
Jan.-Sept., 1927	23,686	87	6	...	7,354	27	7,447	16,467	60
WAX (thousands of pounds):									
September, 1928	50,670	1,689	1,880	63	26,396	880	84,330	20,960	699
August, 1928	54,084	1,745	2,793	90	31,446	1,014	79,136	30,771	993
Jan.-Sept., 1928	464,653	1,696	17,686	65	313,569	1,144	84,330	235,078	858
September, 1927	47,888	1,596	3,040	101	32,350	1,078	170,172	29,051	968
Jan.-Sept., 1927	432,686	1,585	14,537	53	248,846	912	170,172	213,536	782

*Figures in this column for crude petroleum are runs to stills. †From Bureau of Foreign and Domestic Commerce, subject to revision. Exports include shipments to Alaska, Hawaii and Porto Rico. ‡Includes California light crude. §Includes California heavy crude and fuel oil.

RUNS TO STILLS AND OUTPUT OF REFINERIES IN THE UNITED STATES, SEPTEMBER, 1928

	Crude oil Domestic	Crude oil Foreign	Unfinished oils	Natural gasoline	Total input (bbls.)
East Coast	8,587,000	6,078,000	1,216,000	92,000	15,971,000
Appalachian	3,071,000	.....	117,000	58,000	3,246,000
Ind., Ill., etc.	9,011,000	.....	716,000	172,000	9,899,000
Okla., Kans., etc.	10,019,000	.....	422,000	396,000	10,837,000
Texas	15,604,000	87,000	734,000	651,000	17,076,000
Louisiana and Ark.	6,036,000	944,000	53,000	347,000	7,380,000
Rocky Mountain	2,279,000	.....	657,000	126,000	3,062,000
California	18,094,000	.....	*172,000	†961,000	19,227,000
Total United States	72,701,000	7,109,000	4,085,000	2,803,000	86,698,000
Daily average, 9/28	2,423,400	237,000	136,100	93,400	2,889,900
Daily average, 8/28	2,406,200	225,500	128,200	98,200	2,858,200
Texas Gulf Coast	11,170,000	87,000	657,000	520,000	12,434,000
Louisiana Gulf Coast	3,901,000	944,000	16,000	248,000	5,109,000

	Gasoline (bbls.)	Kerosene (bbls.)	Gas oil and fuel oil (bbls.)	Lubricants (bbls.)	Wax (lbs.)
East Coast	4,671,000	671,000	8,013,000	897,000	17,947,000
Appalachian	1,424,000	332,000	730,000	430,000	8,686,000
Ind., Ill., etc.	5,182,000	563,000	3,023,000	314,000	5,881,000
Okla., Kans., etc.	5,588,000	896,000	3,357,000	211,000	3,911,000
Texas	7,292,000	1,243,000	6,313,000	653,000	6,094,000
Louisiana and Ark.	2,337,000	431,000	3,390,000	97,000	4,414,000
Rocky Mountain	1,501,000	166,000	585,000	53,000	3,737,000
California	5,548,000	735,000	11,648,000	178,000	.....
Total United States	33,543,000	5,037,000	37,059,000	2,833,000	50,670,000
Daily average, 9/28	1,118,100	167,900	1,235,300	94,400	1,689,000
Daily average, 8/28	1,098,000	173,800	1,208,000	93,300	1,744,600
Texas Gulf Coast	5,620,000	938,000	4,322,000	617,000	5,770,000
Louisiana Gulf Coast	1,751,000	379,000	1,995,000	95,000	4,414,000

	Coke (tons)	Asphalt (tons)	Other finished products (bbls.)	Unfinished products (bbls.)	Losses (bbls.)
East Coast	11,000	148,300	120,000	43,000	620,000
Appalachian	4,000	.....	40,000	52,000	183,000
Ind., Ill., etc.	42,000	35,600	184,000	84,000	144,000
Okla., Kans., etc.	28,900	1,300	93,000	101,000	411,000
Texas	11,700	19,100	5,000	597,000	788,000
Louisiana and Ark.	11,200	40,100	198,000	484,000	154,000
Rocky Mountain	10,300	1,900	13,000	568,000	84,000
California	.....	59,300	220,000	*297,000	263,000
Total United States	119,100	305,600	873,000	2,226,000	2,653,000
Daily average, 9/28	3,970	10,187	29,100	74,200	88,400
Daily average, 8/28	4,330	10,210	32,000	81,600	86,000
Texas Gulf Coast	9,000	19,000	1,000	109,000	636,000
Louisiana Gulf Coast	11,100	38,000	188,000	362,000	62,000

Note—Wax, coke and asphalt equivalent to 278.4 pounds per barrel and 5.05 and 5.53 bbls. per ton, respectively.
*Includes 181,000 bbls. net tops produced. †Includes 128,000 bbls. natural gasoline run through pipe lines.

GASOLINE PRODUCTION BY THE VARIOUS METHODS—SEPTEMBER, 1928 (Barrels)

	Straight-run	%	Cracked	%	Natural gasoline	%	Total
East Coast	2,533,000	54	2,046,000	44	92,000	2	4,671,000
Appalachian	933,000	66	433,000	30	58,000	4	1,424,000
Ind., Ill., etc.	2,769,000	54	2,241,000	43	172,000	3	5,182,000
Okla., Kans., etc.	3,286,000	59	1,906,000	34	396,000	7	5,588,000
Texas	3,814,000	52	2,827,000	39	651,000	9	7,292,000
Louisiana and Ark.	1,170,000	50	820,000	35	347,000	15	2,337,000
Rocky Mountain	741,000	50	634,000	42	126,000	8	1,501,000
California	4,142,000	75	445,000	8	*961,000	17	5,548,000
Total	19,388,000	58	11,352,000	34	2,803,000	8	33,543,000
Total August, 1928	20,004,000	59	10,989,000	32	3,044,000	9	34,037,000
Total Jan.-Sept., 1928	161,134,000	59	88,520,000	32	25,541,000	9	275,195,000
Gulf Coasts	3,468,000	47	3,135,000	43	768,000	10	7,371,000

*Includes natural gasoline run through pipe lines.

STOCKS HELD BY THE REFINING COMPANIES IN THE UNITED STATES, SEPTEMBER 30, 1928

	Gasoline (bbls.)	Kerosene (bbls.)	Gas oil and fuel oil (bbls.)	Lubricants (bbls.)
East Coast	4,586,000	1,447,000	8,680,000	2,576,000
Appalachian	765,000	295,000	1,247,000	1,227,000
Ind., Ill., etc.	3,425,000	1,338,000	3,554,000	718,000
Okla., Kans., etc.	1,994,000	541,000	6,972,000	436,000
Texas	4,017,000	1,732,000	12,404,000	1,695,000
Louisiana and Arkansas	1,347,000	1,433,000	5,822,000	115,000
Rocky Mountain	932,000	220,000	1,388,000	127,000
California	9,339,000	1,587,000	.....	870,000
Total United States	26,405,000	8,593,000	*40,067,000	7,764,000
Total United States, 8/31/28	27,197,000	8,922,000	*39,761,000	7,711,000
Texas Gulf Coast	3,482,000	1,633,000	9,856,000	1,613,000
Louisiana Gulf Coast	1,215,000	1,400,000	4,845,000	113,000

	Wax (lbs.)	Coke (tons)	Asphalt (tons)	Other finished products (bbls.)	Unfinished oils (bbls.)
East Coast	30,663,000	26,400	89,900	84,000	7,711,000
Appalachian	12,897,000	3,600	800	67,000	1,257,000
Ind., Ill., etc.	17,747,000	68,700	26,700	184,000	3,994,000
Okla., Kans., etc.	2,896,000	39,500	3,500	111,000	2,387,000
Texas	4,591,000	112,900	7,400	13,000	11,316,000
Louisiana and Arkansas	4,747,000	63,900	18,000	63,000	2,397,000
Rocky Mountain	10,789,000	64,900	8,000	57,000	1,148,000
California	.....	.....	48,600	169,000	†9,522,000
Total United States	84,330,000	379,900	202,900	748,000	39,732,000
Total United States, 8/31/28	79,136,000	402,100	225,500	857,000	39,096,000
Texas Gulf Coast	4,503,000	98,500	7,400	5,000	2,900,000
Louisiana Gulf Coast	4,747,000	63,500	18,000	55,000	1,980,000

*East of California. †Includes 965,000 bbls. tops in storage.

DIRIGIBLES ARE NOW USING BY-PRODUCTS

(Continued from Page 127)

gines, as these have pronounced anti-detonating properties and permit of the use of high compression. The specific gravity of Blau gas varies between 1.04 and 1.08. Being slightly heavier than air, the gas flows to the mixers by gravity.

Type of Engines

The Graf Zeppelin is powered by five 12-cylinder, 550-horsepower Maybach-Zeppelin VL-2 engines which are housed in individual power cars slung beneath the hull in such a way that the propellors escape one another's backwash. These engines weigh 2,450 pounds each, and the aggregate of 2,750 pounds gives the ship a cruising speed of about 72 miles per hour in still air, a top speed of about 80 miles per hour and a cruising radius of about 6,100 miles.

The VL-2 is a development of the Maybach-Zeppelin engines in the United States Navy's Los Angeles, built in Germany in 1924. That type produced 420 horsepower at sea level and 400 at the altitude of Friedrichshafen, at 1,400 revolutions per minute. Owing to increased compression, the use of aluminum pistons and carburetor alterations, the VL-2 develops 600 horsepower at sea level and 550 at Friedrichshafen, at 1,600 revolutions per minute.

The VL-2 was adapted to gaseous fuel by making the throttle valve shifts of the Maybach carburetors hollow. There are four of these carburetors per engine, one to each three cylinders. From the bags containing the Blau gas, pipes lead into the valve shafts. An adjustment valve controls the flow of gas according to the throttle position. Another valve, inserted into the gas feed lines, permits a change from gaseous to liquid fuel or vice versa in a few seconds without stopping the engine.

The specific consumption of liquid fuel at full load is said to average 0.451 pounds per horsepower-hour. The fuel used in the return trip of the dirigible is a by-product of natural gasoline, 1,000,000 cubic feet of it being made by the Louisiana Gas & Electric Co.'s gasoline plant at Winchester, Ky., and shipped to the field at Lakehurst, N. J. Preliminary experiments showed that a by-product gas from Louisville Gas & Electric Co.'s plant had a 40 to 50 per cent ethane content. This gas is a by-product of the natural gas from the eastern Kentucky fields, used in the manufacture of gasoline. The company developed its own fractionating or separating apparatus, and manufactured the 1,000,000 cubic feet of ethane gas from approximately 3,000,000 cubic feet of by-product gas. The fractionation was conducted under a pressure of 250 pounds and a temperature of about minus 50 degrees Fahrenheit.

OKLAHOMA GASOLINE PRICES UNCHANGED

(Continued from Page 32)

current market are storing and say they will continue to store expecting an advance in crude to carry the gasoline price back to 10 cents. The weighted average prices on the various grades of gasoline sold Monday of this week and last week as reported by Oklahoma refiners appears below.

Grade—	Price Nov. 5	Price Oct. 29
58-60 437 endpoint	.09568	.09568
60-62 437 endpoint	.09650	.09900
60-62 400 endpoint	.10187	.10250
64-66 375 endpoint	.11000	.11000

Exporters remained inactive in the Oklahoma territory but inquiries were made in the North Texas area for the 375 and 390 endpoint grades. Naphtha sales remained normal and prices followed the gasoline market, a wide range being quoted.

Natural Gasoline

All grades of natural gasoline showed a price recession, the weakening being attributed to the increased production and the hesitancy on the part of refiners to buy with such a wide margin existing between their price and the natural gasoline price. Now that the natural price has come down practically equal to that of 58-60 U. S. Motor refinery gasoline, more buying is expected and with any further sag in the market exporters are expected to buy. The Bureau of Mines figures for September show a slight increase in stocks, and production for that month reached a new high but stocks had previously gone to such a low figure the increase should have little or no immediate effect on the future of the market.

Kerosene

Still lower prices were quoted on kerosene and some of it moved as low as 5½ cents from Oklahoma. This can not be taken as representative of the market but shows the position certain refiners are in with respect to moving their production. Usually these are the smaller plants and depend on their day to day shipments to keep operations on schedule.

Distillates

While there was no change in the dis-

tillate prices, more of the material moved and gave promise of stabilizing the prices at their present level despite a generally declining market. The light, low-flashed material continued to prove the most popular grade and shipments were being delayed at some plants.

Fuel Oil and Gas Oil

The balance between the West Texas fuel oil price and the Oklahoma prices remained unchanged but the Texas production continued to threaten the latter at all times. Sales were reported made in the West Texas area at prices as low as 22½ cents, making the equivalent Oklahoma price 47½ cents. What will be the final outcome of this situation remains to be seen but one suggestion is that West Texas crude prices will be advanced and, with this expected, refiners are running a maximum volume of oil at present. With an advance in the crude market gasoline prices may not advance quickly enough to equalize and the result will be the revenue from the fuel oil will have to be increased proportionately and prices will be forced higher.

Gas oil, like fuel oil, was plentiful but no price changes occurred.

Lubricants and Wax

All grades of neutral and motor oils were freely offered and by the close of the week, the larger refiners reduced their quotations. This did not mean a corresponding reduction to many of the buyers, however, for price concessions have been given in so many instances, the reduction simply means a general observance of the true level of the market. Wax remains unchanged.

WINKLER POTENTIAL PRODUCTION REDUCED

(Continued from Page 33)

when the gauges were taken for the period November 1 to 15, according to the figures released by H. N. Pardee, umpire. Of the 394 wells, 103 wells were tested, including the 14 new ones completed during the October 15 to 31 period. During the same period five new 40-acre units were added to production.

Gauges for Winkler County on October 1 showed a 9,411-bbl. decline in potential production. During the middle of the month 167 wells were gauged and the potential production went to a new peak of 2,798,134 bbls.

Winkler County's production may be held on a fairly even keel for several months if the Leck and O'Brien areas develop in a manner closely approaching that which characterized the development of Hendricks. The Leck area is 9 miles north of the Hendricks Pool and the O'Brien area is approximately 3 miles south of the present southern limits of Hendricks. Both areas have discovery wells that made better than 2,000 bbls. initial.

The Yates Pool showed an increase of 117,612 bbls. in potential production when the semimonthly proration gauges were made. Only 11 wells were tested on the first of the month. The average potential production of the 274 wells on the 150½ producing units is 2,165,338 bbls. The potential of the pool is much greater, going up to 4,166,917 bbls.

Thirty-five wells in the Yates Pool are showing water. This is an increase of one well showing water within the past month. The 72,500-bbl. outlet is divided among four pipe line companies as follows: Humble Pipe Line Co., 28,500; Illinois Pipe Line Co., 22,000; Shell Pipe Line Corp., 14,500 bbls., and Gulf Pipe Line Co., 7,500 bbls.

Howard County's allowed production from the lime producing well was raised from 25,000 bbls. daily to 30,000 bbls. daily, effective November 1. At the same time the Railroad Commission granted Henshaw Oil Corp. permission to produce 5,000 bbls. daily from its producer in Section 6, Block 32, Township 2s, until such time as there are other wells completed in the new 2,200-foot zone. When new wells are completed in this zone special rules will be made to cover the situation.

RAILROAD OFFICE IN TULSA

The Erie Railroad Co. moved its offices from Oklahoma City to the Kennedy Building, Tulsa, November 1.

PATENTS LAW AND PRACTICE

Patents Law and Practice is the title of a small book containing the United States patent law, with a digest of the law, and directions how to obtain a patent. A copy may be obtained free of charge from Richards & Geir, 274 Madison Ave., New York City.

PROGRAM OF ANNUAL MEETING A.P.I.

(Continued from Page 42)

be presented by the General Committee on Code of Ethics to this group

All oil men engaged in the marketing of refined petroleum products and the session for discussion and for ratification.

development of a national code of marketing practices are invited to attend.

Evening

8:00 p. m.—Group Meeting:

Group 2—General Topic: "Refinery Technology."....North Ball Room
Chairman: (To be announced).
"Developments in Refinery Technology."....E. W. Isom, Chairman, General Committee on Refinery Technology
Paper (subject to be announced)....A. E. Dunstan, Anglo-Persian Oil Co.
"Topping and Cracking of West Texas Crudes and Treatment of Distillates from these Crudes."....H. H. Hewetson, Beacon Oil Co.
"The Refining of Pecos Crude."....Sydney Born, Transcontinental Oil Co.
"The Relation of the Liquefied Petroleum Gas Industry to the Oil Industry."....R. C. Allen, Phillips Petroleum Co.

THURSDAY, DECEMBER 6, 1928

NOTE: There will be no General Session on Thursday. The day will be devoted to group meetings, arranged by general topics, at which the various subjects will be treated in addresses by selected speakers. Opportunity will be given for brief general discussion of the subject.

Executive Committee Meeting

12:30 p. m.—Meeting of the Executive Committee of the Board of Directors. (Luncheon in Private Dining Room No. 1).

Morning

10:00 a. m.—Group Meetings:

Group 1—General Topic: "Development and Production Engineering."....Grand Ball Room
Chairman: J. Edgar Pew, Sun Oil Co.
"Tubular Goods Used in Drilling."....Melbert Schwarz, Rio Bravo Oil Co.
"Choice of Equipment for Exploration Wells."....Wendell M. Jones, Petroleum Equipment Co.
"Handling Flowing Wells in the Mid-Continent Fields."....J. R. McWilliam, Skelly Oil Co.
"Experiments on Screen Pipe."....E. A. Carr, Pure Oil Co.

Group 2—General Topic: "Refinery Technology."....North Ball Room
Chairman: (To be announced).
"Testing and Maintenance of Fire Foam Solutions."....J. B. Rather and D. P. Weld, Standard Oil Co. of New York
"Automatic Viscosimeter."....Clifford M. Larson, Sinclair Refining Co.
"Development of the Logarithmic Viscosity Temperature Chart."....Neil MacCoull, The Texas Company
"Methods of Testing Gear Lubricants."..C. L. Knopf, Sinclair Refining Co.
"Formation of Acetic Acid in Heat and Pressure Cracking."....F. W. Hall and R. deM. Taveau, The Texas Company
"Treatment of Naphthene Base Petroleum Distillates."....G. F. Olsen, General Petroleum Corp.

Group 3—General Topic: "Corrosion."....South Ball Room
Chairman: (To be announced).
Report of Sub-committee on Production and Pipe Line Corrosion....E. P. Bly, Standard Oil Co. of California
Report of Sub-committee on Refinery and Marine Corrosion....H. F. Perkins, Gulf Refining Co.
Report of A.P.I. Research Associate at Bureau of Standards....Gordon N. Scott
"Accelerated Tests on Paints and Coatings."....C. T. Langford, Marland companies
"Combating the Corrosion of Pressure Stills."....W. F. Faragher, Universal Oil Products Co.

Afternoon

2:00 p. m.—Group Meetings:

Group 1—General Topic: "Business Session of the Division of Development and Production Engineering."....South Ball Room
Presiding: John R. Suman, Chairman of the Division.
Chairman's Report of 1928 Activities of the Division.
Election of National Officers.
Report of Committee on Drilling Practice.
Report of Committee on Production Practice.
Open Forum: Discussion of progress and suggestions for conduct of Divisional activities during 1929.

Group 2—General Topic: "Refinery Technology: Motor Fuels."....North Ball Room
Chairman: (To be announced).
Two papers covering the results of the Co-operative Motor Fuel Research at the Bureau of Standards (subjects and speakers to be announced.)
"The Accuracy of Various Methods of Determining Detonation."....Neil McCoull, The Texas Company
"Service Testing Methods for Petroleum Products."....Alois Krenser, Standard Oil Co. of California
"Significance of Gum in Gasoline."..R. E. Wilson, Standard Oil Co. of Indiana

Group 3—General Topic: "Marketing Problems."....Grand Ball Room
Chairman: H. B. Earhart, White Star Refining Co.
"Economics of Marketing Petroleum Products."....John D. Gill, Atlantic Refining Co.
"Marketing Equipment Problems."....B. L. Majewski, Shaffer Oil & Refining Co.
"Credits."....H. M. Edinger, Barnsdall Refining Co.
"The Extension of Sales of Asphalts."....J. S. Helm, Standard Oil Co. of New Jersey
"The Present and Potential Market for Oil Fuels for Heating."....Trell W. Yocum, Oil Heating Institute

Evening

8:00 p. m.—Annual Dinner....Grand Ball Room
"Trends in Oil and Gas Laws."....Gurney E. Newlin, President, American Bar Association
"Petroleum Problems Outside the United States."....Sir John Cadman, Chairman, Anglo-Persian Oil Co.

Committee Meetings

A large number of A.P.I. Committees will meet at Chicago immediately preceding or during the Annual Meeting. The Chairman of each committee will indicate to the respective members the time of meeting and the Stevens Hotel room number. Among the committees which will be called to meet are the following:

General Committee on Uniform Methods of Oil Accounting.
General Committee on Oil Pollution.
General Committee on Fire Prevention.
  Sub-committee on Vents, Screens and Flame Arresters.
General Committee on Automotive Transportation.
General Committee on a Petroleum Industry Code of Ethics.
General Committee on Refinery Technology.
  Sub-committee on Testing Methods and Specifications.
General Committee on Standard Products for Measuring, Sampling and Testing Crude Oil.
  Sub-committee on Uniform Tank Measurements and Gauge Tables.
General Committee of Division of Development and Production Engineering.
  Committee on Standardization of Nomenclature and Well Records.
  Committee on Standardization of Production Procedure.
General Committee on Railroad Transportation.
  Mechanical Sub-committee.
  Sub-committee on Demurrage Rules.
  Sub-committee on Industry Side Track Agreements.
  Sub-committee on Diversion and Reconsignment Rules.
  Committee on Vapor Pressure.
General Committee on Corrosion.
  Sub-committee on Production and Pipe Line Corrosion.
  Sub-committee on Refinery and Marine Corrosion.
  Conference with Manufacturers of Pipe Coatings.
General Committee of the Division of Standardization.
  Committee on Standardization of Oil Field Boilers.
  Committee on Satndardization of Belting.
  Committee on Standardization of Cable Tool Joints.
  Committee on Standardization of Rigs and Derricks.
  Committee on Standardization of Oil Country Tubular Goods.
  Committee on Standardization of Rig Irons.
  Committee on Standardization of Rotary Drilling Equipment.
  Committee on Standardization of Wire Rope and Manila Cordage.
  Committee on Standardization of Pumping Equipment and Engines.
  Committee on Standardization of Steel Storage Tanks.
Committee on Fundamental Research.
Committee D-2 (A.S.T.M.) on Petroleum Products and Lubricants.
Committee on Public Relations.
Committee on Revision of A.P.I. By-laws.
Legal Committee on Oil and Gas Lease Forms.

WEST TEXAS FIELDS

(Continued from Page 44)

down at 3,060 feet with no increase in oil.

New proration gauges for the Hendricks Pool dropped 26,000 bbls. in comparison to the previous proration report. Detailed figures on Hendricks proration figures as well as Yates proration figures are given in another article.

Roberts Pool Contracts

Crude contracts featured the week's activities in the Roberts Pool of southern Howard County. J. S. Cosden & Co. contracted to deliver 1,000,000 bbls. in 90 days starting November 12 to McMahon Oil & Pipe Line Co. of Fort Worth who will in turn move the oil to Shreveport, La., refineries. November 12 was set as the starting delivery date because a new 16-cent rate per hundred over the T.P. railroad to Shreveport from Big Spring will be effective that date.

The price for the first 250,000 bbls. is reported to be 72½ cents per barrel loaded on cars at Big Spring, and the remainder will be at a price of 75 cents per barrel. The regular posted price for the crude is 65 cents per barrel and the difference cares for gathering charges. Cosden & Co. have a pipe line running from the field to their rack at Big Spring.

Cosden & Co. closed a deal last week with Henshaw Oil Corp. to take 5,000 bbls. daily from the Henshaw Corp. Settles lease in Section 6, Block 32, at a price of 80 cents per barrel. This crude is better than the average Howard County crude and established a new price for the 2,200-foot horizon oil. The contract will be operative for one year. Cosden & Co. are building a 6-inch lateral from their 8-inch line in the Roberts Pool to the Henshaw Corp. well.

In the area close to the Henshaw well Louisiana Oil & Refining Corp. plan to drill a 4,000-foot test if necessary with No. 1 Abrams, Section 3, Block 32. In this same territory Taylor Link Oil Co.'s well looks good for 200 bbls. after a shot.

Jones County Find

The west side of the Bickley Pool in Jones County appears to have brighter prospects as a result of a find in the Independent Oil & Gas Co.'s No. 1, SE cor. of the company's 59-acre lease in the southwest part of Section 51, Block 18. The well topped the lime at 2,491 feet and the pay at 2,517 feet. Around 1,500 feet of oil rose in the hole in 55 minutes.

This well is the diagonal northwest offset to the Snowden and McSweeney discovery well. The Tiner and Bickley Pools are the most active areas in Jones County and are north of the old Noodle Creek Field.

Production of West Texas declined 2,063 bbls. to 330,788 bbls. during the past week mainly because of a drop in Pecos County production. For convenience a small amount of Glasscock production has been carried as Howard County production. With the completion of a well good for several hundred barrels the reports were changed to give Glasscock County its full production and will be carried in that manner in the future.

WEST TEXAS COMPLETIONS

Week ended November 3

Crane County

Magnolia Petroleum Co.'s No. 3 University-Lassiter, 330 feet from north and west of NE of SE Section 34, Block 30, location was abandoned. The location was abandoned on its No. 3 Hardwick, 330 feet from north and west of NW of Section 39, Block 30. Prairie Oil & Gas Co.'s No. 8 Lassiter, 330 feet from the north and east lines of Section 47, Block 30, was dry and abandoned at 405 feet.

Garza County

Lattimer-Waggoner's No. 1 Cross, 330 feet from the south and west lines of Section 13, Block 4, location was abandoned.

Howard County

Amerada Petroleum Corp.'s No. 1 Dora Roberts, 990 feet from the north line and 2,310 feet from east line Section 137, Block 29, topped the lime at 2,150 feet and had an initial production of 4,300 bbls. at 2,928-78 feet. Cosden Co.'s No. 1-E Dora Roberts, located 2,310 feet from south and 1,886 feet from east Section 157, Block 29, topped the lime at 2,170 feet, had an oil show at 3,035-41 feet, was drilled to a total depth of 3,053 feet and was dry and abandoned. Magnolia Petroleum Co.'s No. 11 Dora Roberts, 905 feet from south line and 330 feet from west line, topped the pay at 2,481 feet, was drilled to a total depth of 2,660 feet and had an initial production of 300 bbls.

Jones County

Snowden & McSweeney's No. 3 Bickley, 970 feet south and 319 feet west of NE of N half of NW of Section 50, Block 18, T.&P.R.R. Survey, swabbed 1,000 bbls. daily at 2,474-81 feet.

Loving County

Hadlock & Miller's No. 1 Ramsey, 990 feet southwest and 1,650 feet southeast of Section 80, Block 1, topped the Delaware at 4,230 feet, was drilled to a total depth of 4,395 feet, shot with 50 quarts at 4,280-4,304 feet and had an initial production of 25 bbls. daily.

Winkler County

Atlantic Oil Producing Co.'s No. 6-B Hendricks, 2,200 feet north and 2,310 feet west of SE Section 46, Block 26, topped the lime at 2,265 feet, topped the pay at 2,670 feet, was drilled to a total depth of 2,742 feet and had an initial production of 3,000 bbls. daily. Pure Oil Co.'s No. 7-C Hendricks, 1,650 feet south and east of NW cor. Section 45, Block 26, topped the lime at 2,234 feet and had an initial production of 13,000 bbls. daily at 2,612-48 feet. Republic Production Co.'s No. 6-B Hendricks, 1,650 feet south and 330 feet east of Section 41, Block B-5, topped the lime at 2,193 feet, topped the pay at 2,515 feet, was drilled to a total depth of 2,552 feet and had an initial production of 5,000 bbls. daily, 80 per cent water. Roxana and The Texas Company's No. 4 Cowden, 2,310 feet north and 330 feet west of Section 3, Block B-12, topped the lime at 2,458 feet, had a gas show at 2,540 feet, topped the pay at 2,868 feet, was drilled to a total depth of 2,895 feet and had an initial production of 375 bbls. hourly. Southern Crude Oil Producing Co.'s No. 1 Hendricks T-67-A-3, 990 feet south and 330 feet east of NW cor. Section 42, Block B-5, topped the lime at 2,640 feet, topped the pay at 2,951 feet, was drilled to a total depth of 2,961 feet, had an initial production of 300 bbls., 3 per cent water. Its No. 3 T-67-E Hendricks, 990 feet north and 330 feet east of SW cor. Section 42, Block B-5, topped the lime 2,640 feet, topped the pay 2,949 feet, was drilled to a total depth of 2,950 feet and had an initial production of 30 bbls., 20 per cent water.

PECOS COUNTY
Week Ended October 30

Company, lease—	Wells	Bbls.
California:		
Yates, lease 1	17	6,298
Smith, lease 1, Sec. 37	3	427
Smith, lease 1, Sec. 23	2	134
Smith, lease 2	2	187
Smith, lease 3	12	1,688
Tippett, lease 1	1	11
Cosby Drilling Co.:		
M. A. Smith	1	Off
Gulf Prod. Co.:		
All leases	28	9,868
Humble Oil & Ref. Co.:		
M. A. Smith	10	1,713
Smith-B	5	665
Kirby Pet. Co.:		
J. H. Tippett	1	43
Kirby Pet. & Edson:		
J. H. Tippett	1	217
Marland Oil Co.:		
Yates-A	10	860
Matador Oil Co.:		
Smith	2	0
Mazda & Savoy:		
Smith	2	230
McMan Oil & Gas Co.:		
Smith-A	1	675
Smith-B	4	1,296
Smith-C	1	155
J. H. Tippett	3	337
McMan & Marland:		
Yates	17	3,280
Mid-Kansas & Transcontinental:		
Yates-A	24	10,136
Yates-B	25	4,563
Yates-C	9	3,637
Yates-D	6	7,093
Yates-E	1	245
Yates-F	3	675
Yates-G	4	1,089
Yates-H	6	5,927
Smith	2	1,311
Smith-Taylor	18	2,660
Oil Operators Trust:		
Pecos River	7	764
Phillips Pet. Co.:		
Smith	1	85
Red Bank Oil Co.:		
Smith	4	150
Roxana Pet. Corp.:		
Tippett	11	1,889
Smith	9	1,113
Smith-B	1	235
Smith D	1	275
Simms Oil Co.:		
Smith	7	4,049
Skelly Oil Co.:		
Tippett	1	101
Texon Oil & Land:		
Yates	2	0
Total Yates Field	265	74,081

WINKLER COUNTY
Week Ending October 30

Company, farm, section and block—	Wells	Prod.
Amerada Pet. Co.:		
Cowden, 3, B-12	1	519
Atlantic O. P. Co.:		
Hendricks-A, 34, B-5	8	1,576
Hendricks-B, 44, 26	3	730
Hendricks-D, 29, B-5	8	2,620
Hendricks-E, 41, B-5	3	1,040
Hendricks-G, 40, 26	6	3,165
Atlantic & Collett:		
Hendricks-F, 40, 26	12	7,761
Atlantic & Kesslar Logan:		
Lee, 3, 74	1	590
Bankers Prod. Corp.:		
Hendricks, 30, B-5	1	174
California Co.:		
Hendricks, 29, B-5	8	946
Cranfill & Reynolds:		
Hendricks-A, 28, B-5	2	540
Hendricks-B, 35, B-5	1	160
Hendricks C, 33, 26	2	2,121
Hendricks-D, 33, 26	1	220
Hendricks-E, 33, 26	2	621
Eastland Oil Co.:		
Hendricks, 35, B-5	2	560
Hendricks-B, 35, B-5	1	102
Empire G. & F. Co.:		
Daugherty, 3, 74	1	490
Gulf Prod. Co.:		
Hendricks-A, 34, B-5	12	3,340
Hendricks-B, 45, 26	10	8,175
Hendricks-C, 40, B-5	5	2,725
Humble O. & R. Co.:		
Hendricks-A, 34, B-5	16	4,811
Hendricks-B, 29, B-5	6	990
Hendricks-C, 32, 26	8	1,486
Hendricks-D, 27, 26	4	1,106
Independent O. & G.:		
Hendricks-A, 34, B-5	7	1,943
Howe-B, 44, 26	2	210
McCabe, 36, B-5	2	327
Hendricks, 42, B-5	1	21
Vardeman-B, 41, B-5	6	1,450
Magnolia Pet. Co.:		
Hendricks, 29, B-5	8	936
Marland Oil Co.:		
Hendricks, 33, 26	4	1,286
Hendricks-A, 29, 26	1	280
Hendricks-B, 34, 26	1	Off
Mining & Eng.:		
Hendricks, 10, B-12	1	14
Murchison & Cranfill:		
Hendricks-A, 35, B-5	3	496
Hendricks-B, 35, B-5	3	1,420
Hendricks-C, 35, B-5	1	50
Hendricks-A, 33, 26	1	2,000
Hendricks-I, 34, 26	2	501
Prairie Oil & Gas Co.:		
Hendricks, 40, 26	6	3,289
Pure Oil Co.:		
Hendricks-A, 41, B-5	10	2,670
Hendricks-B, 34, B-5	13	2,913
Hendricks-C, 45, 26	8	7,640
Republic Prod. Co.:		
Hendricks-A, 45, 26	3	2,112
Hendricks-B, 41, B-5	5	1,710
Hendricks-C, 42, B-5	5	650
Richardson et al.:		
Stockton, 50-F	1	1,195
Roxana Pet. Co.:		
Scarborough, 1, B-22	2	Off
Hendricks-A, 45, 26	6	4,740
Hendricks-B, 29, B-5	6	2,001
Roxana Pet. Co.:		
Hendricks-C, 29, B-5	8	1,605
Hendricks-D, 41, B-5	6	2,010
Hendricks-E, 40, B-5	3	963
Hendricks-F, 46, 26	5	2,167
Hendricks-G, 39, 26	1	120
Roxana-Texas:		
Cowden-A, 3, B-12	4	1,290
Hendricks, 45, 26	6	2,121
Hendricks-A, 29, B-5	9	1,260
Hendricks-B, 40, 26	6	1,731
Hendricks-C, 40, 26	6	4,275
Hendricks-D, 40, 26	6	1,967
Hendricks-E, 40, 26	3	1,619
Skelly Oil Co.:		
Hendricks, 40, 26	12	8,316
Hendricks-B, 39, 26	1	Off
So. Crude O. P. Co.:		
T-67 Hendricks-A, 42, B-5	3	310
T-67 Hendricks-A, 4, B-12	4	810
T-67 Hendricks-B, 44, 26	3	693
T-67 Hendricks-3-B, 33, 26	4	678
T-67 Hendricks-C, 33, B-5	5	842
T-67 Hendricks-2-D, 28, 26	1	761
T-67 Hendricks-E, 42, B-5	4	198
T-67 Hendricks-F, 33, B-5	4	817
T-68 Hendricks-3-A, 35, B-5	3	561
T-88 Hendricks-A, 44, 26	4	652
T-88 Hendricks-B, 4, B-12	2	475
T-88 Hendricks-C, 29, B-5	7	1,067
T-88 Hendricks-H, 28, B-5	4	772
T-88 Hendricks-I, 30, B-5	4	990
T-88 Hendricks-J, 30, B-5	3	1,224
T-88 Hendricks-K, 41, 26	3	930
T-88 Hendricks-L, 4, B-12	1	457
T-88 Hendricks-M, 33, 26	21	1,458
T-88 Hendricks-N, 28, 26	2	622
T-88 Hendricks-P, 28, 26	1	373
T-88 Hendricks-S, 34, 26	2	884
T-88 Hendricks-T, 34, 26	3	562
T-88 Hendricks-U, 41, 26	4	1,425
T-89 Hendricks-A, 35, B-5	3	317
T-89 Hendricks-B, 35, B-5	2	773
T-89 Hendricks-F, 40, B-5	1	290
Texon O. & L. Co.:		
Hendricks-A, 41, B-5	6	829
Hendricks-B, 45, B-5	5	1,346
Winkler O. P. Co.:		
Hendricks, 33, 26	1	Off
Total Winkler County	406	137,539

ARGO OIL CO. OFFICERS

Max W. Ball, who resigned as president of the Argo Oil Co. has been succeeded by Arthur E. Johnson, formerly vice president of that company and also affiliated with the Mountain & Gulf Oil Co. Warwick M. Downing was succeeded as a director by W. O. Merryweather, who has been secretary of the company since its organization. Ralph O. Deitler, assistant to the president of the Midwest Refining Co., succeeded Mr. Ball on the board of directors.

Wire Cable Whipped and cut --- *in less than 1 minute*

THE Starrett Steel Band and Cable Cutter (a kit tool) is a new method for binding and cutting any grade of wire cable—up to 1 inch. Takes a minute and leaves a steel sleeve on the end of the cable. No frayed ends or torn hands.

Write for prices and details.

MORSE-STARRETT PRODUCTS CO.

1916 Broadway Oakland, California

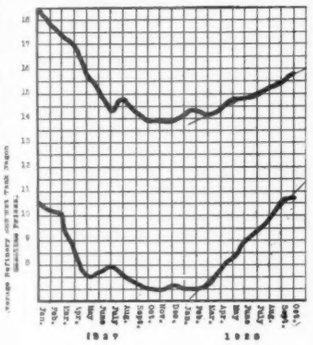
Of Interest to Sales Departments

HUTCHINSON PLANT STARTS

A. Frederickson, president of the Hutchinson Oil Refining Co., has announced the appointment of the Security Petroleum Co. of Kansas City, Mo. as sales representatives for their production. The refinery is located in Hutchinson, Kans., and has been recently started operating.

NARROWING MARGINS IN GASOLINE PRICES

Over the past 22 months there has been a steady trend toward the narrowing of the margin between the refinery gasoline price and the retail price, which has amounted to more than 2 cents per gallon in practically all sections. This is a



subetantial amount when considering the total margin normally ranges between 6 cents and 3 cents, but it also serves as a reflection of the fact refinery prices were out of line as a result of overproduction. The accompanying graph is representative of the general conditions. In arriving at the average refinery price which may be representative of the trend in that market covering the eastern and mid-western market, the average between the Oklahoma spot price and the New York (Bayonne) price was taken. This average shows a consistent improvement over the period in question. To arrive at a representative retail or net tank wagon price the net tank wagon prices in five large cities scattered over the East and Mid-West were averaged. These prices also show an improvement but it may be clearly seen from the graph, this improvement has not been at the same rate as the refinery prices. The accompanying table shows the detailed refinery prices in Oklahoma and New York over the period and the net tank wagon prices in Kansas City, Chicago, Cleveland, Philadelphia and New York over the same period.

SLIGHT INCREASE IN BRITISH IMPORTATIONS

NEW YORK, Nov. 3.—Imports of petroleum products into Great Britain for the first nine months of 1928 amounted to 1,626,000,000 gallons, as compared with 1,583,000,000 gallons for the corresponding period last year, an increase of about 2.75 per cent. Values, however, continue to run materially under 1927. The total value of all imports for the first nine months of the year was £30,-226,000, as contrasted with £34,768,000 for the first nine months of 1927, a decline of more than £4,500,000 on a larger total volume.

The home refining industry in England continues to suffer from the low prices quoted on products from other countries. Imports of crude for the first nine months of the year were 377,272,000 gallons, as compared with 535,673,000 gallons in the comparable period last year. Imports from Persia fell from 374,206,000 gallons in the first three quarters of 1927 to 315,959,000 gallons in the similiar period this year, with imports from other countries off from 161,467,000 gallons to 61,-313,000 gallons. So long as it is cheaper to import refined products than to refine them from the crude in Great Britain, this situation is expected to continue.

A gain of more than 33 per cent was shown in imports of motor spirit into Great Britain for the first nine months this year, imports amounting to 571,306,-000 gallons up to September 30, this year, as compared with 427,882,000 gallons in the corresponding period last year. Although the total gallonage showed this large increase, values were little changed, standing at £13,818,000 for the first nine months this year against £13,614,000 last year, an average decline of about 25 per cent in the import price of gasoline.

Comparative data follow:

	Gallons		Value	
	1928	1927	1928	1927
Crude—Persian	315,959,415	374,206,022	£3,318,763	£5,442,196
Other	61,312,634	161,466,702	768,436	2,442,693
Lamp oil	139,087,115	149,493,290	2,597,609	3,371,212
Motor spirit	571,306,131	427,882,130	13,817,967	13,613,950
Other spirit	8,649,570	5,056,133	210,219	167,756
Lubricating oil	84,117,357	72,197,712	3,772,263	3,715,992
Gas oil	95,082,998	75,840,204	1,316,827	1,395,349
Fuel oil	350,635,082	316,762,130	3,912,653	4,593,714
Other oil	103,398	153,301	10,864	26,250

PROTEST 5-CENT TAX

The increase in the gasoline tax in Quebec, Canada, from 3 cents to 5 cents is causing a number of protests to be made by the motorists. An extended program of road improvements has been adopted by Quebec which will require the full amount of the $5,000,000 annually which the higher tax is expected to yield. British Columbia is also considering an increase in the tax from 3 cents to 6 cents with the idea of adding greatly to the present system of paved roads. At present the retail gasoline price is 29 cents imperial gallon.

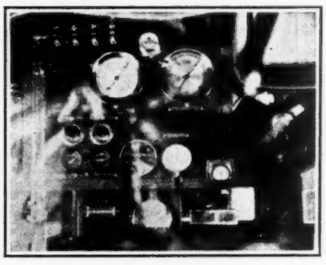
COMPARISON OF AVERAGE REFINERY GASOLINE PRICES AND THE NET TANK WAGON GASOLINE PRICES IN THE EAST AND MIDWEST DURING LAST 22 MONTHS

	Refinery prices			Tank wagon prices					
	Okla.	New York (Bayonne)	Av.	(1)	(2)	(3)	(4)	(5)	Av.
Jan. 1, 1927	$.09000	$.1200	$.10500	$.179	$.170	$.190	$.180	$.210	$.1858
Feb. 1	.08750	.1200	.10375	.140	.160	.190	.190	.210	.1780
March 1	.07500	.1300	.1025	.140	.150	.190	.180	.210	.1740
April 1	.06500	.1050	.08500	.140	.160	.180	.170	.200	.1650
May 1	.06250	.0875	.07500	.140	.150	.160	.150	.190	.1580
June 1	.06500	.0875	.07625	.129	.140	.160	.140	.190	.1518
July 1	.06750	.0900	.07875	.109	.140	.160	.120	.190	.1438
August 1	.06625	.085	.07562	.109	.140	.160	.140	.190	.1478
September 1	.06250	.0825	.07250	.109	.140	.160	.140	.170	.1438
October 1	.06125	.0825	.07187	.109	.140	.140	.140	.170	.1398
November 1	.06000	.0800	.07000	.109	.140	.140	.140	.170	.1398
December 1	.06000	.0825	.07125	.109	.140	.140	.140	.170	.1398
Jan. 1, 1928	.05750	.0825	.07000	.109	.140	.140	.150	.170	.1418
February 1	.05750	.0825	.07000	.109	.140	.140	.160	.170	.1438
March 1	.06168	.0825	.07209	.109	.140	.140	.150	.170	.1418
April 1	.06570	.0900	.07785	.109	.140	.140	.160	.170	.1438
May 1	.06940	.0975	.08345	.129	.140	.140	.160	.170	.1478
June 1	.07547	.1025	.08898	.129	.140	.140	.160	.170	.1478
July 1	.07945	.1075	.09347	.129	.140	.140	.170	.170	.1498
August 1	.09088	.1075	.09919	.139	.140	.140	.170	.180	.1538
September 1	.09664	.1175	.10707	.139	.140	.160	.180	.180	.1598
October 1	.09725	.1175	.10737	.149	.150	.160	.180	.180	.1638
November 1	.09568	.1125	.10409	.149	.150	.160	.170	.180	.1618

(1) Kansas City, (2) Chicago, (3) Cleveland, (4) Philadelphia, (5) New York.

Associated Equips Special Automobile to Test Gasolines

The Associated Oil Co. of California has equipped a stock Chrysler sedan car with gauges, meters and other instruments to make comparative tests to determine the performance of gasoline having varying antiknock properties. By changing the head of the motor a low compression and a high compression ratio



View of instrument board.

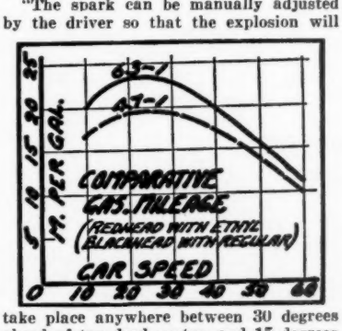
are obtainable on the same engine and other factors were equalized where possible in arriving at comparable and practical results.

The instrument board was arranged as shown in the picture and included a speedometer for measuring the speed and distance, and a gasoline gauge. Thermometers were placed in the gasoline tank and radiator and corrections made for volume changes due to temperature changes. Other instruments were placed on the car allowing the operator to measure the wind resistance, exhaust temperature, air temperature, etc., making the study of many other problems possible.

Results Obtained

The results of the comparative tests using tetraethyl lead gasoline as the antiknock fuel are discussed in the Record, the company's house organ, as follows:

"The spark can be manually adjusted by the driver so that the explosion will



take place anywhere between 30 degrees ahead of top dead center, and 15 degrees after top dead center, a range much wider than that ever used in normal driving. The amount of throttle opening was accurately indicated at all times by means of a vacuum gauge attached to the manifold. An air speed indicator of the airplane type was installed on the front of the car, so that it was possible to estimate the amount of wind resistance which might be met during the test.

"With this equipment we were able to obtain some very interesting information concerning conditions which the average driver meets every day, but probably does not fully understand. For example, we constructed a curve showing the effect of speed on gasoline economy. Most people realize that the faster they drive the less will be the gasoline mileage, but do not appreciate how great the effect of speed is on gasoline consumption. Our curves show very clearly how economy is greatest at a speed of approximately 25 miles per hour and how the miles per gallon rapidly drops as speeds of 40 to 50 miles per hour are reached. This is due to the fact that the head resistance of the car passing through the air becomes greater in proportion to the square of the speed.

This curve also shows some of the data relating to high and low compression, the upper curve being the miles per gallon obtained when using the Red Head and Ethyl gasoline; the lower curve being the miles per gallon obtained when using the low compression head and white gasoline. There is a difference of some 14 to 15 per cent between these curves throughout the entire range, thus proving that Ethyl gasoline pays in a high compression car. For example at 25 miles per hour when this car was equipped with the low compression head, we obtained 19.7 miles per gallon. By simply changing the heads, the engine was converted into one of high compression, and when using Ethyl gasoline we obtained 23.2 miles per gallon. No other change was made in mechanical equipment, spark setting, or carburetor adjustment. This is simply the difference obtainable when us-

(Continued on Page 159)

CANADIAN OIL PRODUCTS SLIGHTLY LESS IN VALUE

A statement issued by the Canadian Bureau of Statistics at Ottawa gives official figures covering the petroleum products industry in Canada for 1927. In that year the output of the Canadian plants was valued at $64,528,820, a decline of $6,700,000 from the 1926 total.

The 1927 production figure included the output from 16 petroleum refineries, valued at $63,979,849, together with an output, valued at $548,971 from 7 plants which compounded lubricating oils and greases.

Of the 16 refineries in operation, 4 were in Ontario, 4 in Alberta, 3 in British Columbia, 2 in Quebec and 1 each in Manitoba, Nova Scotia and Saskatchewan. Capital employed in these 16 refineries was given at $55,442,193; the average number of employes was 3,802; materials cost $52,743,530 and the value added by manufacturing was $11,236,319.

Gasoline Production

The production of gasoline totaled 158,549,724 imperial gallons, of which 73,722,859 gallons were obtained by the cracking process. The final output of fuel and gas oils totaled 286,525,733 gallons of which 239,272,246 gallons were for sale, and 47,253,487 gallons for use as fuel in the retorting plants; in addition it was reported that 206,639,272 gallons were made for use in cracking processes.

Of the seven plants compounding lubricating oils and greases, three were in Quebec and four in Ontario. The capital invested in these plants was $693,371; employes numbered 54; materials cost $316,391, and the value added by manufacture was $232,580.

Considerable quantities of casinghead gasoline are imported into Canada each year for use in blending with the refinery gasoline. The amounts of these are shown in official import figures, however, and are not included with the figures of refinery output.

Consider Disposal of Crankcase Oil

District of Columbia Investigation Indicates Lubricants Can Be Reclaimed. Hazard When Run to Sewers

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Nov. 5.—Used crankcase oil, when rerefined, meets government specifications, according to a report being issued by the sewer department of the District of Columbia based on analyses resulting from the careful investigation by the United States Bureau of Standards.

"The results are entirely favorable and show that all the rerefined oils pass government specifications," states the Bureau of Standards in referring to the several samples submitted. "Oils deteriorate in use but when properly rerefined may be as good as new. If a used oil is rerefined by a suitable process, the product may be as good or even better than the original oil."

Source of Trouble

Waste crankcase oil has long been a source of trouble in sewers of all cities and there have been explosions in sewers resulting from the gasoline contents of this refuse oil so that last January a survey was undertaken by the sewer department of the District of Columbia and 46 city engineers of the United States and 19 foreign municipalities replied to questionnaires sent out in connection with the general survey to show world-wide conditions in the disposition of waste crankcase oil.

These municipalities stated the various dispositions they are making of the accumulations of waste crankcase oil by and at garages, auto repair shops, and filling and service stations. The result has been the formulation of a plan for the establishment of a plant here to refine waste crankcase oil under a contract with some private concern with the District of Columbia Government. The District Government itself uses about 50,000 gallons of lubricating oil per annum in its own automotive vehicles and it has been conservatively estimated that under the plans of enforcing the retention and systematic disposition of waste crankcase oil, so that it will no longer find its way into the sewer system, there will be at least 200,000 gallons a year available for collection for rerefining There are now 146,143 automotive vehicles in the District of Columbia and if an average of two gallons per month is estimated for each of them it will be seen that the quantity of waste crankcase oil in the District of Columbia alone is very large, and the amount available for collection will doubtless far exceed the conservative estimate of the engineers.

The reclamation of crankcase oil has been the subject of widespread attention for a long time, but this is the first instance in which the United States Bureau of Standards has been called in for the necessary investigation to furnish information in respect to the quality of the lubricating oil to be refined.

Department Report

The report being issued by the sewer department on the result of its survey and which contains quotations from the report of the United States Bureau of Standards is, in part, as follows:

From the 46 replies to questionnaire received from cities within the United States, the following information was obtained:

Cities prohibiting the disposal of waste oil in sewers, 70 per cent.

Cities not prohibiting the disposal of waste oil in sewers, 25 per cent.

Cities not making definite reply to above query, 5 per cent.

Cities collecting waste crankcase oils, 7 per cent.

Cities in which commercial firms collect waste oil to some extent, 55 per cent.

Cities requiring the maintenance of intercepting traps, 75 per cent.

Cities reporting fires or explosions in sewers, 35 per cent.

Cities reporting trouble from presence of oil in sewers, 65 per cent.

Cities manifesting interest in the subject, 85 per cent.

The various methods reported of disposing of waste crankcase oil include the following: Pouring on dumps, burning city garbage, fuel oil, oiling concrete forms, paint manufacture, road oil, extermination of mosquitoes, depositing in sewers and reclaiming for reuse.

Foreign cities evince an unusual interest in the subject and several wrote at considerable length in reply. Most of them report that the situation has not become so acute as is probable in the United States. However, many are adopting regulatory measures to cope with the anticipated dangers.

Cities' Attitude

From the many comprehensive replies received, some pertinent extracts are quoted which, in a measure, reflect the interest and conditions being experienced by other municipalities.

City of Toledo: "We realize the seriousness of this oil waste problem and appreciate the fact that ultimately a permanent solution must be worked out."

City of Los Angeles: "The above subject is one in which any progress which you can make in the matter will assist this city. It has been realized and commented on for some time that the presence of gasoline (in sewers) is a menace to life and property."

City of New Bedford: "Any information * * * may be considered as a step toward a permanent solution of the ever-increasing seriousness of the problem under discussion."

City of Seattle: "Gasoline vapor has been found at more than 100 places in the city's sewers, in many places in dangerous quantities."

City of Omaha: "The same condition exists in Omaha as in your city."

City of Fall River: "We agree entirely with what you say in regard to the possible danger from this (presence in sewers of waste crankcase oil) source."

City of Syracuse: "We are bothered with considerable accumulations of grease and oil at our sewage treatment works, indicating that a considerable quantity of this material reaches the sewer system."

City of San Antonio: "We have the same problem as you have."

City of Milwaukee: "The city of Milwaukee has a regular tank truck for collecting oil and uses the oil in the burning of its garbage. The city has some general ordinances which prevents the owners of property from discharging oil wastes into the sewer system, but like prohibition, it is unenforceable."

City of Fort Worth: "I wish to advise that this is a problem that we have no direct control over and is becoming a serious matter to handle."

Constitutes Serious Hazard

City of Boston: "In general, I would state that the matter of gasoline in sewers has become rather acute in the past five years in the city of Boston and we have had several narrow escapes from serious accidents. Regular collection of crankcase oil and waste gasoline by the city under regulations, either by day labor or by contract, seems to be the best solution offered under present conditions."

City of Baltimore: "The city collects in an indirect way all crankcase oil. A contract was entered into and the contractor is to be paid $3,240 a year for collecting all crankcase oil. I believe that collecting the oil as is now done, the hazard from fires in the sewerage system is considerably lessened."

City of Berlin (Germany): "Evils, such as are described in the above circular (Sanitary Engineer Questionnaire) have been noticeable in the drainage pipes of the city of Berlin drainage system, especially in sewers capable of inspection."

City of Paris (France): "The mixture of oil and gas coming from garages and filling stations is treated by distillation and the oil that is gathered is again used for oiling purposes."

City of Winnepeg (Canada): "The waste oil drained from automobiles and trucks at the different garages and filling stations is stored in small iron drums and taken away by the oil companies."

City of Liverpool (England): "The position in Liverpool is similar to that which you describe as obtaining in your city, except the problem has not become acute here."

City of Toronto (Canada): "The five largest oil companies operating service stations throughout the city collect this waste crankcase oil periodically and return same to refinery. We are informed that credit is not given for the oil collected and that the value of same practically equals the cost of collection. We anticipate more stringent regulations will be required in the near future as conditions in this respect are becoming worse from year to year."

City of Edinburgh (Scotland): "Though the problem is not so acute with us as it is with you, yet the number of petrol driven vehicles is increasing so rapidly that in a few years' time we may be faced with a similar problem as you are."

Bureau of Standards

This office has been materially assisted by the United States Bureau of Standards in making observations of oil reclaiming machinery as well as analyses of a number of samples of the reclaimed product. It was through the co-operation of this government agency that the practicability of rerefining waste crankcase oil and the useful value of the rerefined product suggested its commercialization possibilities.

Excerpts from a report promulgated by the United States Bureau of Standards in specific cases where five different samples of oils were submitted from various sources and nine separate tests and analyses were made, are given as a matter of general information with respect to rerefining: "Both these oils appear to be suitable for reuse in automobile engines." This report was made on two samples of rerefined oil, reclaimed by local concerns and submitted by the sewer department for analyses.

In a much greater detailed report, results of rerefining waste crankcase oils by and/or under the supervision of bureau officials, are given. The report of the United States Bureau of Standards states, in part, as follows:

"Our report is enclosed giving the results of tests on the * * * process for rerefining used oils. The results are entirely favorable and show that all the rerefined oils pass government specifications. Oils deteriorate in use, but when properly rerefined, may be as good as new. If a used oil is rerefined by a suitable process, the product may be as good or even better than the original oil."

Table No. 1 shows test on oils from the Post Office Department and from the office of Public Buildings and Grounds, where a direct comparison is possible between new and rereclaimed oils. (Note: "Rerefined" oils is evidently meant.) In one case there is a loss of 10 degrees Fahrenheit in the flashpoint and in another case a gain of an equal amount, so that it may be concluded that it is possible to get practically as high a flashpoint in the rerefined oil as in the new oil. There is a slight gain in viscosity. With the particular amount of * * * earth used in these tests, * * * pounds to the * * * of used oil, the color of the rerefined oil is somewhat darker than the new oil. A lighter color should be obtained by increasing the amount of earth used but since the tests indicate that the Sligh oxidation number may be even lower for the rerefined oil than for the new oil, there is no indication that the increase in darkness of color had any injurious effect.

The source of crankcase drainage used in test No. 3 as stated in this report was oil pumped from the sump of a public filling station and is a mixture of a variety of oils.

TABLE 1
Comparison of Properties of New, Used and Rerefined Oils From Two Government Departments

Test—	Post Office Depart. New	Post Office Depart. Used	Post Office Depart. Rerefined	Public Bldgs. & Parks New	Public Bldgs. & Parks Used	Public Bldgs. & Parks Rerefined (a)	Public Bldgs. & Parks Rerefined (b)
Saybolt viscosity, 210 degrees F.	....	....	47	48	....	50	51
Saybolt viscosity, 100 degress F.	318	133	340	317	170	367	380
Flashpoint, degrees Fahrenheit	355	....	345	345	....	345	355
Union color number	5	....	7	4½	....	5	5
Pour point, degrees Fahrenheit	B 20	....	B 20	B 20	....	B 20	B 20
Neutralization number	0.13	....	0.05	0.03	....	0.05	0.05
Carbon residue, per cent	0.07	....	0.11	0.11	....	0.15	0.14
Sligh oxidation number	....	....	29	28	....	22	23
Ash, per cent	....	0.01	0	....	0.00	0	0
Dilution, per cent	....	10	0	....	8	0	0

(a) Run No. 5; (b) Run No. 8.

TABLE 3
Tests of Used and Rerefined Oil From a Public Filling Station

Test—	Used	Refined— Run 3	Refined— Run 9
Saybolt vis., 210 deg. F.	....	58	57
Saybolt vis., 100 deg. F.	253	442	428
Flashpoint, deg. F.	....	390	375
Union color No.	....	8	7
Pour point, deg. F.	....	B 20	B 20
Neutralization No.	....	0.05	0.05
Carbon residue, per cent	....	0.57	0.42
Sligh oxidation No.	....	13	14
Ash, per cent	0.09	0	0
Dilution, per cent	8	0	0

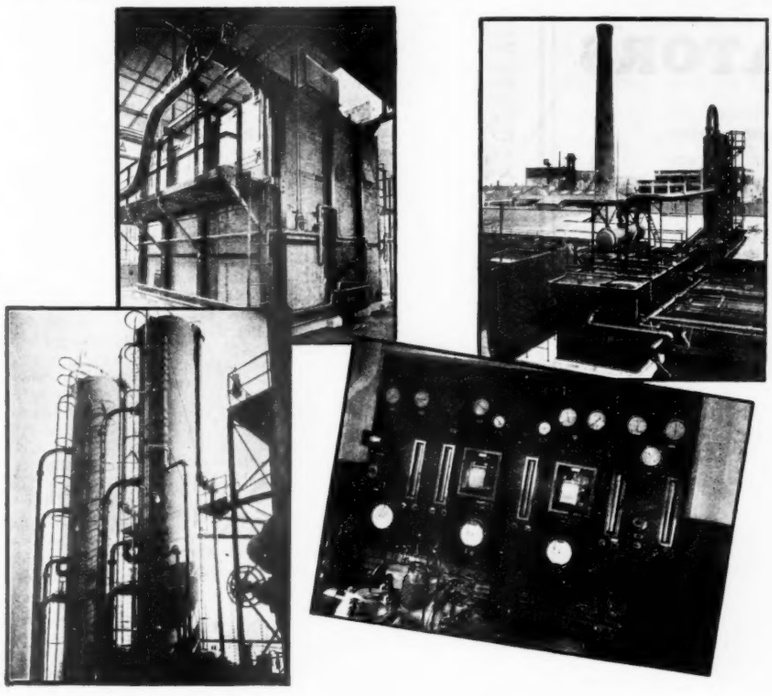
Table No. 3 shows that a satisfactory oil may, at times, be made from crankcase drainings, even when no care is taken in the selection of material for refining.

Obtaining Co-operation

Recent activity in the District of Columbia on the part of some of the larger transportation companies (bus lines and taxicab companies), the report of the sewer department continues, "in reclaiming this waste product for reuse and the construction of a plant and the installation of equipment for the collection and rerefining of waste oil for public sale, make it apparent that those places which have quantities of these drainings may be easily educated to co-operate with municipal authorities if the latter make it obligatory and definite as to method of both retention and disposition of waste

(Continued on Page 156)

ESSENTIAL POINTS OF EFFICIENT PIPE STILLS



The following Companies are some of those who have purchased BADGER Equipment:

Magnolia Petroleum Co., of Texas
Roxana Petroleum Corp.
Craig Oil Co.
Freedom Oil Works Co.
White Star Refining Co.
Gulf Refining Co.
Skelly Oil Co.
Phillips Petroleum Co.
Pierce Petroleum Corp.
Tide Water Oil Co.
Anglo-Persian Oil Co., Ltd.
Empire Refineries, Inc.
Marland Oil Co.
Vacuum Oil Co.
Associated Oil Co.
Barnsdall Corp.
Humble Oil & Refining Co.
Tidal Refining Co.
Standard Oil Co. of N. J.
General Petroleum Corp.
Beacon Oil Company
Lubrite Refining Co.
Pennzoil Company
Shell Company of California
New Orleans Refining Co.
Emlenton Refining Co.
Independent Refining Co.
Richfield Oil Co.

Each element of a Complete Pipe Still Unit whether for topping, atmospheric or vacuum distillation of lubricating oils is important but the overall efficiency and the character of the products are more dependent on the design and arrangement of the Fractionating Towers than on any other single factor, yet the cost of Towers is less than 15% of the total unit.

Although Pipe Heater efficiency is important, the arrangement of parts governing the manner of heating, is also of the utmost importance, particularly in handling lubricating oils.

Badger Fractionating Towers and Fractionating Systems are recognized as having the highest efficiency. Badger Pipe Stills are operating at over 80% thermal efficiency, and are giving products of superior quality.

Complete Badger Units comprising the most efficient Heaters, Towers, Exchangers, etc. are setting a new standard in Petroleum Refinery Equipment.

E. B. BADGER & SONS COMPANY

New York - - Tulsa - - Los Angeles - - Boston

NEILAN

Ball Bearing

SENSITIVE PRESSURE REGULATORS

are superior to any other type of regulator for general service. They respond quickly to changes in volume; operate without friction; give sensitive, steady regulation; are simple and compact; and do not get out of order easily.

Note These Improved Features:

Sensitive Regulation—
they give steady, uniform regulation for all conditions of flow.

Full Pipe Capacity—
Valve ports and clearances permit free and unrestricted passage of the gas, and will pass the full capacity of the inlet pipe.

Multiple Springs—
have vastly greater flexibility and enable the valve to automatically adjust itself to changes in volume with practically no variation of the outlet pressure.

Large Diaphragms—
larger diaphragms than usual, permitted by the use of multiple springs, provide greater power for operating the valves and overcome friction. Consequently the operation is more positive, sensitive and accurate.

Frictionless Operation—
the diaphragm plunger and stem move in ball bearings which eliminate all friction caused by diaphragm thrust and the tendency of the springs to cock and tilt.

Ball Bearing Adjusting Screw—
turns on ball bearings and does not twist the springs nor tend to unwind them. The regulator always operates at exactly the pressure for which it is set.

Non-Corrosive Construction—
cast iron valve bodies, valve seat and valve plugs, and stainless steel stems and stuffing box nuts resist the corrosive action of sulphur compounds.

No. 35 for Reducing Pressure.
No. 36 for Back Pressures.

Descriptive folder on request.

NEILAN, SCHUMACHER & CO.
641-651 Santa Fe Avenue, Los Angeles, California

Representatives:

Maintenance Engineering Corp.
1400 Conti Street,
Houston, Texas
Stocks Carried

NEILAN

C. F. Camp Company
221 East Archer St.,
Tulsa, Okla.
Stocks Carried

Geo. B. Allan & Co.
Dallas, Texas
Shreveport, Louisiana
Stocks Carried

"You Can Be Sure of Neilan Products"

NEW LOCATIONS IN TEXAS PANHANDLE AND NORTH AND WEST TEXAS FIELDS

TEXAS PANHANDLE
Week Ended October 24

Carson County

Ware and others' No. 1 E. J. Ware, 990 feet south and 400 feet east of the NW cor. Section 18, Block 3, A.B.&M. Survey.

Gray County

Adams Oil Co.'s No. 2 J. S. Morse, 990 feet north and 330 feet west of the SE cor. N half of Section 3, Block 26, H.&G.N. Survey. Gulf Production Co.'s No. 1 G. H. Saunders, 990 feet north and 330 feet east of the SW Section 3, Block 1, A.C.H.&B. Survey. Same company's No. 6 J. B. Bowers-A, 330 feet south and east of the NW cor. W half Section 89, Block B-2, H.&G.N. Survey. Schwald and others' No. 1 Sullivan and others, 330 feet south and west of the NE cor. E half NE SW Section 1, Block 1, A.C.H.&B. Survey. The Texas Company's No. 5 A. Chapman-A, 330 feet north and 1,138 feet east of SW cor. SE Section 51, Block 25, H.&G.N. Survey. B. S. Arnold's No. 1 J. E. Mongole, center of east 160 acres of Section 212, Block B-2, H.&G.N. Survey. Eslick & Mckinney's No. 1 Mrs. J. A. Hopkins, 330 feet south and west of the NE cor. E half of NE Section 84, Block B-2, H.&G.N. Survey. Magnolia Petroleum Co.'s No. 3 W. W. Harrah, 330 feet south and west of NE cor. NW Section 150, Block 3, I.&G.N. Survey.

Hutchinson County

Phillips Petroleum Co.'s No. 19 J. J. Perkins-Martin, 990 feet south and 330 feet east of NW cor. W 240 acres of S 320 acres Section 1, Block X02, H.&O.B. Survey.

Moore County

Devonian Oil Co.'s No. 1 J. T. Sneed, Jr., 330 feet north and 2,235 feet west SE cor. of S 160 acres of N 320 acres Matilda Robinson Survey.

Wheeler County

Arnold Oil Co. and others' No. 1 E. Ritchey, 460 feet north and 420 feet west of SE cor. NW Section 5, Block 24, H.&G.N. Survey.

NORTH CENTRAL AND WEST TEXAS

Archer County

Gulf Production Co.'s No. 6 W. O. Hayter-A, 150 feet south and east of NW cor of their 40-acre lease out of the E half Section 2,409, T.E.&L. Survey. Payne and others' No. 5 Mrs. J. E. Parrish, 750 feet north and 450 feet west of SE cor. their 30-acre lease out of Section 2, S.P.R.R. Survey A-1004. The Ascot Co.'s No. 1 J. L. Jackson-Gibbs, & Woodrum, 102 feet north and 150 feet east of SW cor. NW Section 25, Denton County School Land, League 4, A-114. Edwards and others' No. 1 H. O. Prideaux, 150 feet north and west of SE cor. Lot 4, A. McMullen Survey, A-286. C. W. Gilliland's No. 8 W. F. Neumeyer, 150 feet south and 450 feet east of NW cor. of their 80-acre lease out of Section 2,415, T.E.&L. Survey. C. W. Gilliland and others' No. 1 G. Symank, 150 feet south and east of NW cor. Section 11, G. P. Meade Subdivision, L. M. Pasture. Madden & Hunt's No. 9 J. T. Richardson, 150 feet south and 162 feet west of NE cor. N 30 acres of E 60 acres Section 7, South Anderson Ranch Subdivision. Same company's No. 10 J. T. Richardson, 1,350 feet north and 450 feet east of SW cor. of their 125-acre lease Section 1, South Anderson Ranch Subdivision. Magnolia Petroleum Co.'s No. 1 J. H. Robertson, 150 feet south and east of NW cor. S 50 acres of J. H. Robertson 16$-acre tract out of W. C. Winters Survey, A-663. A. E. Marts' No. 1 H. O. Prideaux, 150 feet north and east of SW cor. Lot 8, A. McMullen Survey, A-286. A. E. Marts' No. 2 H. O. Prideaux, 450 feet north and east of SW cor. Lot 8, A. McMullen Survey, A-286. A. E. Marts' No. 3 H. O. Prideaux, 750 feet north and east of SW cor. Lot 8, A. McMullen Survey, A-286. A. E. Marts, No. 4 H. O. Prideaux, 450 feet north and 750 feet east of SW cor. Lot 8, A. McMullen Survey, A-286. Panhandle Refining Co. and others' No. 3 H. O. Prideaux-C, 1,050 feet south and east of NW cor. of their 105-acre lease "C" out of A. Rohus Survey, A-1,126. Same company's No. 4 H. O. Prideaux-C, 1,350 feet south and 1,050 feet east of NW cor. of their 150-acre lease out of A Rohus Survey, A-1,126. Same company's No. 5 H. O. Prideaux-C, 1,650 feet south and 1,050 feet east of NW corner of their 105-acre lease "C" out of A. Rohus Survey, A-1,126. Same company's No. 6 H. O. Prideaux-C, 1,650 feet south and 750 feet east of NW cor. of their 105-acre lease "C" out of the A. Rohus Survey, A-1,126. Prairie Oil & Gas Co.'s No. 2 J. T. Richardson-E, 150 feet north and 450 feet west of SE cor. Section 8, South Anderson Ranch Subdivision. Prairie Oil & Gas Co. and others' No. 1 W. T. Knight and others, 150 feet north and 3,560 feet east of SW cor. W. T. Knight and others 640-acre tract out of the J. Poitevent Survey, A-348. Schermerhorn Oil Co.'s No. 6 H. O. Prideaux, 150 feet south and west of NE cor. Lot 26, J. Dorsey Survey, A-122. The Texas Company's No. 8 W. O. Hayter, 2,371 feet south and 450 feet west of NE corner of their 120-acre lease out of Section 2,409 T.E.&L. Survey. The Texas Company's No. 21 J. T. Richardson, 150 feet north and 689 feet west of SE cor. Section 6, South Anderson Ranch Subdivision. The Texas Company's No. 22 J. T. Richardson, 150 feet north and 989 feet west of SE cor. Section 6, South Anderson Ranch Subdivision.

Brewster County

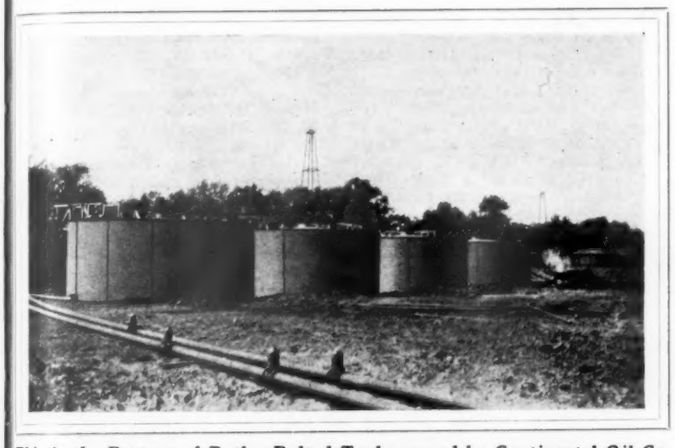
Brewster Oil Co.'s No. 1 Brewster Oil Co., 2,640 feet south and 2,589 feet east of NW cor. Section 45, Block G-15, G.C.&S.F. Survey.

Brown County

Atlantic Oil Producing Co. and Bartlett's No. 1 William Tungate, 330 feet north and west of SE cor. W half of W. G. Goosley Suervy No. 76, (Shown as Mrs. S. Green). Barnsdall Oil Corp.'s No. 1 E. DeBusk, 1,530 feet north and 2,690 feet east of SW cor. of John L. Williams Survey No. 146. Joe Burris and others' No. 9 J. P. Newton, 150 feet north and 1,050 feet west of SE cor. of J. P. Newton 158.5-acre tract out of the P. Curlong Survey No. 151. Cranfill & Reynolds' No. 16 J. B. Eubanks, 2,808 feet south and 450 feet west of NE cor. of J. B. Eubanks 1,278-acre tract out of the Robert Mitchell Survey No. 141. Hammon & Garrett's No. 6 A. L. Curry, 170 feet north and 150 feet west of SE cor. of their 33-acre lease out of the James Kinney Survey No. 624. Kone Production Co.'s No. 19 Roy Hickman, 605 feet south and 150 feet east of the most northerly NW cor. of their lease out of the Thomas Benson Survey No. 783. Midland Oil Co.'s No. 10 G. T. Butler, 610 feet north and 650 feet west of SE cor. of their 54.67-acre lease out of the Thomas Benson Survey No. 783. E. H. Ramsey's No. 1 J. Wooldridge, 150 feet south and 1,462 feet east of NW cor. of H. B. Gaines Survey, A-1,697. Young Brothers-Alexander & Woodley Petroleum Co.'s No. 14 R. Hickman, 150 feet south and east of NW cor. of their 80-acre lease out of the Thomas Benson Survey No. 783. Same company's No. 15 R. Hickman, 406 feet north and 627 feet east of SW cor. of their 80-acre lease out of the Thomas Benson Survey No. 782. Doctor Lloyd and others No. 8 J. C. Collier, 1,710 feet east of the Fort Worth & Rio Grande R. R. right of way and 150 feet south of the N line of the J. C. Collier 320-acre tract out of the W. A. Smith Survey No. 139. Same company's No. 9 J. C. Collier, 2,010 feet east of the Fort Worth & Rio Grande R. R. right of way and 150 feet south of the N line of the J. C. Collier 320-acre tract out of the W. A. Smith Survey No. 139. United Royalties Co.'s No. 2 J. M. Barnes, 150 feet south and 2,500 feet

Battery of 8 Butler Bolted Tanks *in the Seminole Field, Little River, Okla.*

"OIL going on ground," "storm raging," "must move at once," "big tankage needed immediately"—in these emergencies it is natural that Butler service be demanded. Butler Bolted Tanks are made for urgent service. Butler distributors are prepared to



This is the Battery of Butler Bolted Tanks owned by Continental Oil Co.

give urgent service—the kind that is so necessary in the oil field.

Butler distributors are always on the job ready for quick action. They are equipped and organized to respond to your orders at once.

The tanks are made to assemble quickly. The bolt holes, for example, are accurate in size. They are accurate in placement. They are pierced by massive machines. Giant machine pressure assures exactness of work. This accuracy in size and placement of bolt holes overcomes many causes for delay.

Butler sheets are large! There are not many to handle. The number of seams and the chances for leaks are reduced. Large sheets mean speedy erection.

All sheets are made of *blue annealed copper steel* or 3/16" tank plates for added strength and rigidity where needed.

Protects your men!

The Butler Clean-out Opening is large—measuring 2'x4'. It is not a back breaker. It is convenient for an entire cleaning out of the tank. Because of the size of this opening, the work can be done easily, quickly and more safely. *All bolts are removable from the outside.*

The Butler "Oil Field Tanks" Catalog will interest every producer. *Send for a copy and see why Butler Bolted Tanks are in demand by oil men.*

Another view of picture shown at the left.

These reliable dealers erect Butler Bolted Tanks and are ready to serve you speedily:

M & V Tank Co. at Wichita Falls, Olney, Nocona, Cross Plains, Albany, Cisco, Isom and Brownwood, Texas.

Drane-Humphrey Co. at San Angelo, Big Lake, Pyote and McCamey, Texas, and Roswell, New Mexico.

Drane Tank Co. at Tulsa, Holdenville, Seminole, Hallett and Shawnee, Oklahoma; Eldorado and Madison, Kansas.

M. A. Trimmer at Blackwell, Oklahoma, and Oxford, Kansas.

Keyes-Butler Tank Co. at Casper and Cody, Wyoming.

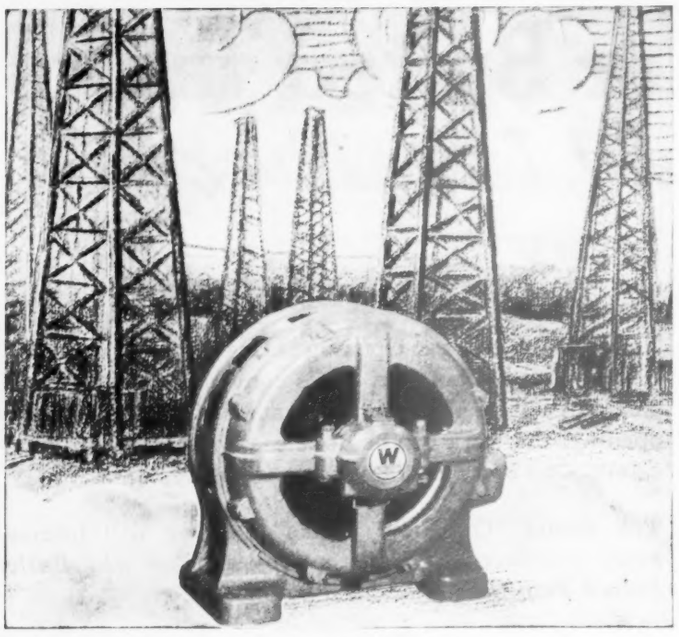
Thomas Moran at Oil City, Shreveport and Georgetown, Louisiana; Muskegon, Mich.

Any kind of welded tank made to your specifications. Also bolted tanks up to 25,000-barrel capacity.

BUTLER MANUFACTURING COMPANY

KANSAS CITY, MO. MINNEAPOLIS, MINN.

Butler Products include: READY-MADE Steel Buildings, Cans, Funnels, Buckets, Measuring Pumps, Truck Tanks, Underground Tanks, Storage Tanks, Bolted Tanks, Etc. Also pipe that can be used as conduit, double well casing or in other ways.



One of the 42-400 hp. induction motors used for driving centrifugal pumps in a large pipe line installation.

A New Era in Pipe Line Pumping

POWER, control, stamina—so definitely have these factors been developed in Westinghouse high-speed induction motors for driving centrifugal pumps that a new era in stimulating production has been reached.

Designed and applied with full consideration of the requirements of oil fields, Westinghouse motors will stand up under the severest kind of punishment. Experience and tests have unquestionably established the superiority of the electric motor drive to that of other forms of power.

Even with other factors being equal, the motor having the highest efficiency rating is the most economical, since efficiency affects the power bill every minute the motor is in operation. The fact that Westinghouse induction motors have unusually high efficiency best explains their economical operation.

Equipped with Sealed Sleeve Split bearings, these motors offer unusual operating and maintenance economies. The Sealed Sleeve feature prevents two of the most common causes of motor failure—oil soaked windings and burned out bearings. Because the oil cannot get out and dust cannot get in, the clean film of lubrication is always present—hence longer life with low upkeep.

Westinghouse Electric & Manufacturing Company
East Pittsburgh Pennsylvania

Sales Offices in All Principal Cities of the United States and Foreign Countries

Westinghouse

X98700-A

west of NE cor. of N. Hawkenberg Survey No. 105.

Callahan County

Dickey Oil Co.'s No. 3 R. D. Williams, 150 feet north and 450 feet east of SW cor. of NW Section 25, Deaf & Dumb Asylum Land. Reiter-Foster Oil Corp.'s No. 1 P. G. Hatchett, 150 feet north and west of SE cor. of SW of SW Section 24, Deaf & Dumb Asylum Land. L. A. Warren's No. 1 F. Seale, 150 feet south and 1,000 feet west of NE cor. of SW Section 130, B.B.B.&C. Survey. (Shown as C. C. Seale).

Cooke County

C. M. Beckner and others' No. 1 Field & Bowers, 819 feet south and 164 feet east of SW cor. E. Arnold Survey, A-1,705, and located on the Field & Bowers 80-acre tract out of the S.P.R.R. Survey No. 23, A-986. Pure Oil Co.'s No. 2 J. C. Embry, 150 feet north and 490 feet west of SE cor. of their 80-acre lease out of the T. J. Moss Survey, A-736.

Coleman County

J. Pierce and others' No. 1 L. V. Eddington, 150 feet south and 1,491 feet east of NW cor. of S half of SW of the Martha Scott Survey, No. 170, A-607. (Shown as A. C. Gray). Cameron and others' No. 1 R. C. Gay, 150 feet south and 690 feet east of the most westerly NW cor. of R. C. Gay 200-acre tract (shown as C. M. Grady) out of the Mary Ann Fish Survey No. 630. Cunningham and others' No. 4 G. W. & L. P. Jennings-C, 200 feet north and 150 feet west of SE cor. of their 45-acre "C" lease out of the A. S. Lipscomb Survey No. 94. The Texas Company's No. 2 T. M. Hays, 200 feet south and 4,263 feet west of NE cor. of Bonds & Sanders Survey No. 93.

Crane County

Gulf Production Co.'s No. 57 J. T. McElroy, 2,102 feet south and 660 feet west of NE cor. of their lease out of Section 201, Block "F," C.C.S.D.&R.G.N. G.R.R. Co. Survey.

Crockett County

J. D. Wheeler's No. 1 State Land, 168 feet north and 1,250 feet east of SE cor. Section 73, Block 1, I.&G.N. and located in the John Oney Suruvey, No. 71½.

Gaines County

Pure Oil Co.'s No. 1 A. A. Williamson, 1,650 feet south and 330 feet west of NE cor. Section 110, Block H, D.&W. R.R. Survey.

Howard County

Henshaw Oil Corp.'s No. 1 W. R. Settles-C, 1,423 feet south and 2,723 feet east of NW cor. Section 6, Block 32, T-2-S, T.&P. R.R. Survey. Magnolia Petroleum Co.'s No. 17 Dora Roberts, 2,310 feet north and 990 feet east of SW cor. Section 136, Block 29, W.&N.W. Survey. Phillips Petroleum Co.'s No. 1 J. M. Thomas, 330 feet north and west of SE cor. Section 13, Block 33, T-1-N, T.&P.R.R. Survey.

Irion County

Central Oil Co.'s No. 1 H. Horney, 1,170 feet north and 450 feet west of SW cor. Section 3, Block 3, H.&T.C. and located in the H.E.&W.T. Survey No. 1,026.

Jones County

McNeeley and others' No. 1 R. Bland, 1,175 feet north and 240 feet west of SE cor. Lot 20, Section 150, DeWitt County School Land, A-164.

McCulloch County

W. Lanning and others No. 1 J. P. Barton, 150 feet south and 300 feet west of NE cor. of the west 95 acres of the east 220 acres of Joseph Bleike Survey No. 1,054.

Montague County

Continental Oil Co.'s No. 3 W. W. Jones-A, 1,197.5 feet north and 550 feet west of SE cor. of their 100-acre lease "A" out of Lot 3, J. W. Jones Subdivision, William Donoho Survey, A-178. Pure Oil Co.'s No. 10 Mrs. S. F. Loy and others, 4,900 feet north and 200 feet west of SE cor. of their 64-acre lease out of Lot 4, J. W. Jones Subdivision, William Donoho Survey, A-178.

Jack County

T. G. Shaw's No. 1 H. C. Shanafelt, 183 feet south and 1,000 feet west of the most westerly NW corner of Lewis Knight Survey, A-324, and located in the Isaac Hughson Survey, A-256, being 183 feet south and 150 feet east of NW cor. of the H. C. Shanafelt 357-acre tract.

Pecos County

Mid-Kansas Oil & Gas Co.'s No. 4 L. G. Yates-F, 250 feet north and 5,065 fee east of SW cor. Section 63, Block 1, I.&G.N. Survey. Red Bank Oil Co.'s No. 5 M. A. Smith, 330 feet north and eas of SW cor. N half Section 24, Block 194, G.C.&S.F. Survey. Talbot & Ditman's No. 1 D. K. Unsicker, 660 feet north and 1,320 feet west of SE cor. Section 2 Block 10, H.&G.N. Survey. The California Co.'s No. 4 M. A. Smith, Lease 1, Section 23, 1,590 feet south and 33 feet east of NW cor. Section 23, Block 194, G.C.&S.F. Survey.

Presidio County

Eastland Oil Co. and others' No. 1 Smith, C Section 17, G.C.&S.F. Certificate No. 4,635.

Reeves County

Doctor Kitsos and others' No. 1 Kloh & Rumsey, 330 feet north and west of SE cor. Section 5, Block 54, Township 5, T.&P.R.R. Survey.

San Saba County

C. S. Wilmott and others No. 1 I. T. Watkins, C SW W. N. French Survey No. 454.

Terrell County

Mrs. J. B. McPhee's No. 1 Sam Belt, C Section 78, Block D-1, E.L.&R.R. Survey.

Throckmorton County

Hayes & Lewis' No. 1 G. W. Carpenter, 150 feet north and west of SE cor. NW NW Section 944, T.E.&L. Survey.

Upton County

Gulf Production Co.'s No. 7 J. F. Lane, 990 feet north and 326 feet west of the most southerly SE cor. of their 160-acre lease out of Section 3, G.C.&S.F. Survey A-212.

Winkler County

Barnsdall Oil Corp.'s No. 2 Tobe Morton, 1,650 feet north and 330 feet east of SW cor. Section 26, Block B-12, School Land. Gulf Production Co.'s No. 1 E. W. Cowden, 440 feet south and 330 feet east of NW cor. of their 240-acre lease out of Section 3, Block B-12, School Land. Same company's No. 1 Ida Hendrick, 330 feet north and west of SE cor. NW Section 44, Block 26, School Land. Same company's No. 31 T. G. Hendrick Tr-G, 330 feet south and west of NE cor. NW Section 40, Block B-5, School Land. Prairie Oil & Gas Co.'s No. 3 E. W. Cowden, 2,200 feet north and 990 feet east of SW cor. Section 3, Block B-12, School Land. Pure Oil Co.'s No. 11 Grisham-Hunter-C, 1,650 feet north and 2,310 feet west of SE cor. Section 45, Block 26, School Land. Same company's No. 12 Grisham-Hunter-C, 330 feet north and 990 feet west of SE cor. Section 45, Block 26, School Land. Republic Production Co.'s No. 5 Grisham-Hunter-A, 1,650 feet north and 2,310 feet east of SW cor. Section 45, Block 26, School Land. Simms Petroleum Co. and others No. 1 G. Sealey, 2,434 feet south and 330 feet west of NE cor. Section 50, Block "F," Gunter & Munson, Maddox Brothers & Anderson Survey. Southern Crude Oil Purchasing Co.'s No. 5 Grisham-Hunter, 3-T-68-A, 1,650 feet south and 990 feet east of NW cor. Section 35, Block B-5, School Land. Same company's No. 2 Grisham-Hunter T-89-C, 2,310 feet north and 990 feet west of SE cor. Section 35, Block B-5, School Land. Same company's No. 7 Ida Hendrick, T-88-I, 330 feet south and 990 feet west of SE cor. Section 30, Block B-5, School Land. Same company's No. 5 Ida Hendrick, T-88-J, 1,320 feet north and 990 feet west of SE cor. Section 30, Block B-5, School Land. Same company's No. 28 T. H. Hendrick, T-88-M, 990 feet north and west of SE cor. Section 33, Block 26, School Land. Same company's No. 29 T. G. Hendrick, T-88-M, 990 feet north and 1,650 feet west of SE cor. Section 33, Block 26, School Land. Same company's No. 30 T. G. Hendrick, T-88-M, 440 feet south and 330 feet west of NE cor. Section 33, Block 26, School Land. Same company's No. 4 T. G. Hendrick, T-88-S, 2,200 feet south and 990 feet east of NW cor. Section 34, Block 26, School Land. Same company's No. 1 T. G. Hendrick, T-89-I, 495 feet south and 2,310 feet west of

A 40,000-bbl. Prescott-Menominee Electric Pump in the Council Hill station of the Oklahoma Pipe Line Company. It is designed to operate against 900 lbs. working pressure.

Overall efficiencies of 80 to 86%

THE high efficiency of Prescott-Menominee motor driven plunger type pumps means low power costs. This in combination with the almost negligible upkeep cuts pumping costs to the rock bottom level.

Prescott-Menominee plunger pumps are able to maintain such high efficiencies because they are not appreciably affected by changes in capacity or pressure requirements. This adaptability to varying conditions is a decided advantage over centrifugal pumps; furthermore, they can be shifted from one service to another, if necessary, without sacrifice in economy.

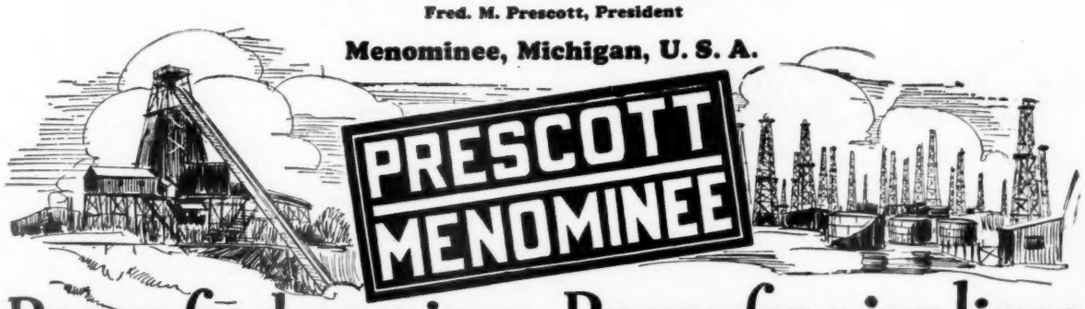
The dependability, economy and many advantages of Prescott pumps are known to experienced engineers everywhere.

The large number of Prescott pumps making remarkable performance records is the best evidence of what they will do for you. Let us send you catalogs and data.

The Prescott Company

Fred. M. Prescott, President

Menominee, Michigan, U. S. A.



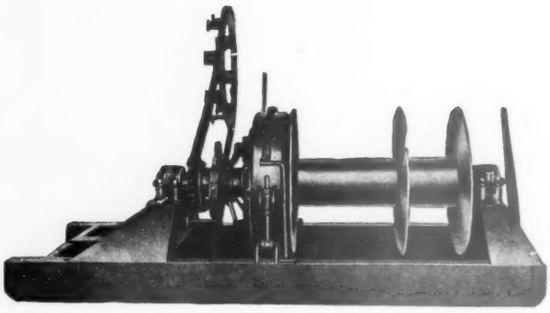
Pumps for deep mines ~ Pumps for pipe lines

O&GJ 11-8 Gray

OCS

CHAIN DRIVEN SAND REEL

FOR 10,000 FOOT WELLS



TIMKEN BEARING EQUIPPED

IT RUNS WITHOUT SERVICE

THE OIL COUNTRY SPECIALTIES MFG. CO.

COFFEYVILLE, KANSAS

Request Bulletin 90

NE cor. Section 10, Block B-12, School Land. Same company's No. 2 T. G. Hendrick, T-89-I, 2,145 feet south and 2,310 feet west of NE cor. Section 10, Block B-12, School Land. Wentz Oil Corp.'s No. 1 Tobe Morton, 1,650 feet north and 330 feet west of SE cor. Section 27, Block B-12, School Land.

Wichita County

Humble Oil & Refing Co.'s No. 2 L. O. Saunders Estate, 950 feet south and 200 feet east of NW cor. W half Section 7, Specht Colony Subdivision. Lomax & The Texas Company's No. 1 W. H. Chilson, Section 6, 868.2 feet north and 766 feet west of SE cor. Section 6, Denton County School Land, League 4, A-417. British-American Oil Producing Co. and others' No. 6 Kemp & Kempner, 1,850 feet south and 550 feet east of NW cor. Block 49, Kemp Wichita Valley Land. Same company's No. 7 Kemp & Kempner, 2,150 feet south and 650 feet east of NW cor. Block 49, Kemp Wichita Valley Land. Same company's No. 8 Kemp & Kempner, 2,450 feet south and 650 feet east of NW cor. Block 49, Kemp Wichita Valley Land. Same company's No. 10 Kemp & Kempner, 200 feet north and 150 feet west of SE cor. of the W 60 acres of the E 80 acres of the N 100 acres Block 49, Kemp Wichita Valley Land. Hammon and others' No. 11 S. H. McCarty, 450 feet south and 150 feet west of NE cor. of the W 20 acres of the N 117 acres of the S. H. McCarty tract out of the W. R. Eaves Survey, A-447. W. T. Knight's No. 1 T. F. Mitchell, 736 2 feet north and 1,183.35 feet west of SE cor. Lot 21, T. F. Mitchell Subdivision, C.T.R.R. Survey No. 1, A-51. W. B. Omohundro's No. 3 J. R. Pace, 1,800 feet north and 850 feet east of SW cor. J. R. Pace 347-acre tract out of the R. J. Scott Survey, A-255. Same company's No. 8 J. R. Pace, 2,175 feet north and 750 feet west of SE corner J. R. Pace 347-acre tract out of the R. J. Scott Survey, A-255. Same company's No. 9 J. R. Pace, 2,250 feet north and 1,100 feet west of SE cor. J. R. Pace 347-acre tract out of the R. J. Scott Survey, A-255. Same company's No. 10 J. R. Pace, 2,375 feet north and 450 feet west of SE cor. J. R. Pace 347-acre tract out of the R. J. Scott Survey, A-255. Same company's No. 11 J. R. Pace, 1,875 feet north and 650 feet west of SE cor. J. R. Pace 347-acre tract out of the R. J. Scott Survey, A-255. Same company's No. 18 J. R. Pace, 1,400 feet north and 800 feet east of SW cor. J. R. Pace 347-acre tract out of the R. J. Scott Survey, A-255. Ryan Petroleum Corp.'s No. 98 G. L. Nance, 4,600 feet south and 150 feet west of NE cor. G. L. Nance 984.8-acre tract out of the Sam O. Fowler Survey, A-78. Same corporation's No. 99 G. L. Nance, 525 feet south and 1,400 feet west of NE cor. G. L. Nance 984.8-acre tract out of the Sam O. Fowler Survey, A-78. E. J. Stump & Co.'s No. 1 W. B. Hamilton and others, 150 feet south and 483 feet east of NW cor. Section 22, Denton County School Land, League 4, A-417.

Wilbarger County

Apple-Brandeberry Oil Co.'s No. 1 W. T. Waggoner, 150 feet north and 180 feet east of SW cor. E 40 acres N 87 acres NE Section 32, Block 4, H.&T.C. Survey. Cosden & Co.'s No. 30 W. T. Waggoner-B, 3,275 feet south and 150 feet east of NW cor. Section 31, Block 4, H.&T.C. Survey. Fain-McGaha Oil Corp.'s No. 1 W. T. Waggoner-AA, 150 feet north and east of SW cor. NE SE Section 18, Block 4, H.&T.C. Survey. Same corporation's No. 19 W. T. Waggoner-S, 450 feet south and 150 feet east of NW cor. SWNE Section 24, Block 4, H.&T.C. Survey. W. J. Grisham's No. 1 W. T. Waggoner, 150 feet north and west of SE cor. W half NE Section 27, Block 6, H.&T.C. Survey. Fain-McGaha Oil Corp.'s No. 20 W. T. Waggoner-S, 450 feet south and 150 feet west of NE cor. SE NW Section 24, Block 4, H.&T.C. Survey. McMan Oil & Gas Co.'s No. 1 W. T. Waggoner, 150 feet south and east of NW cor. SE NE Section 50, Block 4, H.&T.C. Survey. Phillips Petroleum Co.'s No. 2 W. T. Waggoner-BBB, 150 feet south and 490 feet east NW cor. SE NE Section 5, Block 5, H.&T.C. Survey. Prairie Oil & Gas Co.'s No. 10 W. T. Waggoner-A, 941 feet north and 1,400 feet east of SW cor. N 160 acres S 240 acres E half Section 45, Block 4, H.&T.C. Survey. R. R. Robertson and others' No. 1 M. A. Yarbrough, 1,650 feet north and 150 feet east of SW cor. SE Section 8, Block 5, H.&T.C. Survey. P. H. Schucht and others' No. 1 W. T. Waggoner, 150 feet south and west of NE cor. SW SE Section 39, M.E.P.&P. Survey. Waggoner Refining Co.'s No. 7-A W. T. Waggoner-H, 150 feet north and 465 feet east of SW cor. NE NW Section 24, Block 4, H.&T.C. Survey.

Young County

Allday Oil Corp. & Carter's No. 7 C. W. Johnson-A, 150 feet south and 450 feet west of NE cor. Lot 14, Edward W. Sergeant Survey, A-253. Same company's No. 6 C. W. Johnson-A, 150 feet south and 750 feet west of NE cor. Lot 14, Edward W. Sergeant Survey, A-253. Allday Oil Corp.'s No. 2 C. W. Johnson-C, 450 feet south and 150 ,feet west of the most northerly NE cor. Lot 8, Edward W. Sergeant Survey, A-253. R. L. Eckerty and others' No. 1 L. D. Clark, 150 feet south and 800 feet east of NW cor. S half Section 209, T.E.&L. Survey. Lynch & Whitehill's No. 2 C. W. Johnson, 150 feet south and west of NE cor. W 71 acres N 146 acres S 346 acres C. W. Johnson 1,026-acre tract out of the Edward W. Sergeant Survey, A-253. Magnolia Petroleum Co.'s No. 4 C. W. Johnson, 150 feet north and west of SE cor. Lot 13, Edward W. Sergeant Survey, A-253. Prairie Oil & Gas Co. and others' No. 3 R. Campbell, 2,100 feet south and 1,200 feet west of NE cor. Section 1,370, T.E.&L. Survey. E. C. Reed and others' No. 1 A. C. Casey, 817 feet south and 150 feet west of NE cor. Section 1,486, T.E.&L. Survey. Republic Production Co.'s No. 2 H. F. Haywood, 150 feet north and 450 feet west of SE cor. W 100 acres S 132 acres Section 1,468, T.E.&L. Survey. M. A. Smith and others' No. 1 J. J. Grubbs, 150 feet south and west of NE cor. W 80 acres N 160 acres Section 647, T.E.&L. Survey. Robert Oil Corp. & Atlantic Oil Producing Co.'s No. 1 G. B. Hamilton, 1,851 feet north and 450 feet west SE cor. G. B. Hamilton 350-acre tract out of Section 3,401, T.E.&L. Survey. Underwood Drilling Co. and others' No. 2 Campbell, 1,000 feet south and east of NW cor. Section 1,390, T.E.&L. Survey. E. R. Riggs and others' No. 3 O. L. Street, 150 feet south and 1,200 feet west of NE cor. Section 1,488, T.E.&L. Survey. Union Oil Co.'s No. 1 J. R. Wilson, 450 feet south and 150 feet east of NW cor. SE Section 162, T.E.&L. Survey. W. E. White No. 1 W. E. White, 150 feet south and 450 feet west of NE cor. SW Section 258, T.E.&L. Survey. E. R. Riggs and others' No. 2 O. L. Street, 150 feet south and 1,500 feet west of NE corner Section 1,488, T.E.&L. Survey. D. L. Wolfe's No. 6 J. T. Lowe, 550 feet north and 150 feet east of SW cor. NW Section 59, T.E.&L. Survey.

Corrected Locations

Brown County.—Hammon & Garrett's No. 5 A. L. Curry, 770 feet north and 150 feet west of SE cor. of their 33-acre lease out of the J. Kinney Survey No. 624. Same company's No. 3 A. L. Curry, 470 feet north and 150 feet west of SE cor. of their 33-acre lease out of the J. Kinney Survey No. 624. Kerr and others' No. 1 Mrs. M. E. Hale, 450 feet south and 150 feet east of NW cor. NE 40 acres (square) out of the C. Cummings Survey No. 607.

Callahan County—Starr & McDowell's No. 1 W. B. Jones Estate, 150 feet south and west of NE cor. NW Section 89, B.B.B.&C. Survey.

Gray County—Danciger and others No. 1 M. A. Shaw, 1,004 feet north and 330 feet west of SW cor. E 279 acres and located on the east 80 acres of the south 139.5 acres of the west 279 acres Section 5, Block 1, A.C.H.&B. Survey. Gardner-Collins and others' No. 1 G. H. Saunders, 330 feet south and west of NE cor. S 49 acres W 149 acres Section 3, B.&B. Survey. The Texas Company's

WARNING

To All Users of Westcott Orifice Meters

The Charts used on Westcott Orifice Meters are an integral part of these meters. The accurate measurement for which the meters are noted can be entirely ruined by the use of inferior charts.

Genuine Metric made Charts for Orifice Meters are printed on seasoned paper. This paper has been carefully aged so that reasonable exposure and changes in temperature will not have a tendency to expand and contract the paper. By expansion and contraction the perfect circular shape of the chart can be destroyed. Only Metric charts can be depended upon to furnish accurate results.

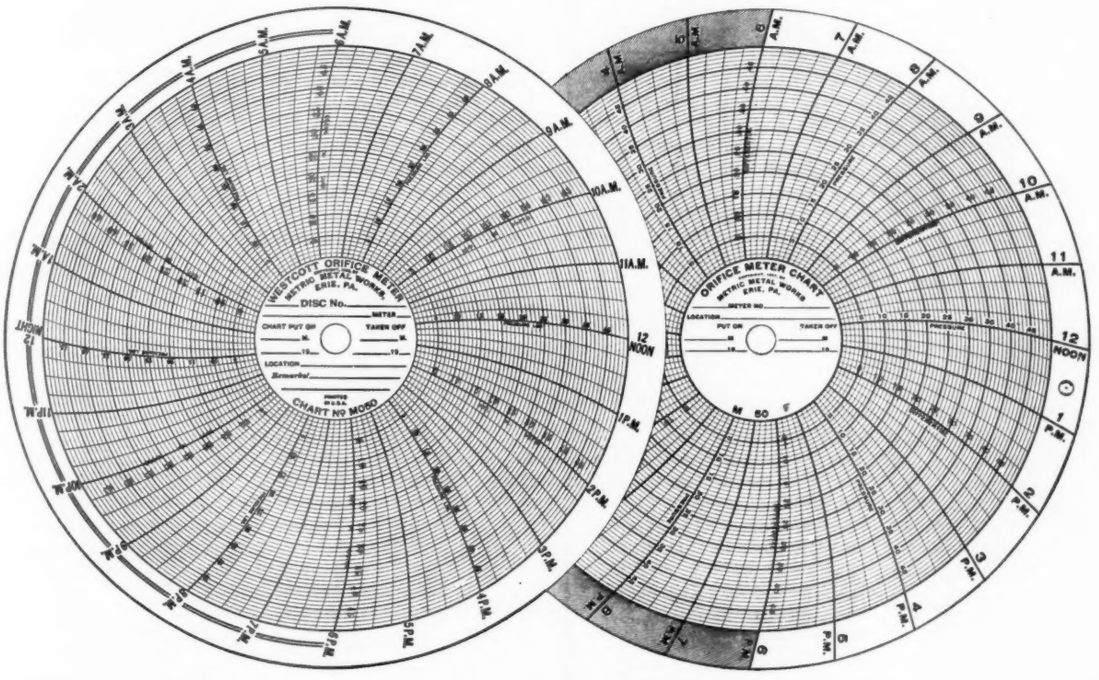
The process of chart manufacture is a delicate one. The center hole punched in the chart must be 100% concentric with the circular divisions of the chart. A chart which is eccentric in the slightest degree will ruin the accuracy of the differential and static pressure records left thereon.

The Purchasing Departments of some gas companies are not always aware of the fact that extreme accuracy and exactness is necessary in the manufacture of Orifice Meter Charts.

METRIC METAL WORKS
of the American Meter Company-Inc.
ERIE - PENNSYLVANIA - U-S-A

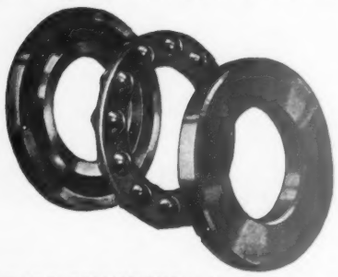
Sales Service

WESTCOTT & GREIS, Inc.
Dallas TULSA Los Angeles



These are the genuine Metric charts

Thrust Bearing Insurance to the Industry



AETNA THRUST BALL BEARINGS help to insure correct thrust bearing performance to the oil industry. Lubricating engineers know that AETNA BEARINGS represent the latest development in thrust bearing manufacture because of AETNA'S policy of "Precision to your Specifications." We have earned our reputation through accuracy of production.

Our Engineering Department stands ready at any time to consult with any manufacturer in the design of special thrust ball bearings—or to quote on AETNA BEARINGS as standard equipment. Let us send you the latest Aetna Engineers' Catalog with complete specifications.

AETNA BALL BEARING MFG. COMPANY
2745 High St., Chicago, Ill.

AETNA
THRUST BALL BEARINGS

High Pressure or Reducing Regulator

The function of this regulator is to reduce the high pressure of the well, or line, to a point where it can be conveniently and safely handled by a low pressure regulator without stress or strain.

The regular iron body class is more than sufficiently strong for any inlet pressure up to 600 pounds. Where higher pressures are experienced, we suggest using our special bronze body regulators.

Write for a copy of our catalog.

THE CHAPLIN-FULTON MFG. CO.
28-40 Penn Avenue Pittsburgh, Pa.

No. 1 M. A. Shaw, 1,100 feet north and 330 feet east of SW cor. E 279 acres Section 5, Block 1, A.C.H.&B. Survey.

Pecos County—Alexander & Lyle's No. 1 Myrtle Sellman, 258 feet north and 1,402 fee west of SE cor. Section 20, Block Z, T.C.R.R. Survey.

Wichita County—Coleman & Coppock's No. 16 Kemp & Kempner, 750 feet north and 690 feet west of SE cor. of their 26,166-acre lease out of Block 82, Kemp Wichita Valley Land. Omohundro and others' No. 4 J. R. Pace, 2,275 feet north and 150 feet west of SE cor. J. R. Pace 347-acre tract out of the J. R. Scott Survey, A-255. Same company's No. 16 J. R. Pace, 1,400 feet north and 500 feet east of SW cor. J. R. Pace 347-acre tract out of the R. J. Scott Survey, A-255.

Winkler County—Independent Oil & Gas Co.'s No. 3 Grisham-Hunter-B, 1,650 feet south and 2,310 feet east of NW cor. Section 41, Block B-5, School Land. Same company's No. 2 Grisham-Hunter-B, 990 feet south and 2,310 feet east of NW cor. Section 41, Block B-5, School Land.

TWO POOLS IN OKLAHOMA CAUSED SEPTEMBER PRODUCTION INCREASE

The 76,288-bbl. increase in the average daily production of Oklahoma in September, and slight gains in California, Texas and Kansas over the production in August caused a slight gain in the production for the 12 months ending September 30 as compared with the 12 months' production ending August 31. In the 12 months ending August 31, 889,765,034 bbls. of crude was produced, but in the 12 months ending September 30 the production was 890,319,728 bbls. As the eastern field production in September was estimated for the purpose of this report the last mentioned figure is subject to minor revision.

The St. Louis Pool in Pottawatomie County and Little River in Seminole County were responsible for the great increase in Oklahoma. The two other States where curtailment of flush production has been consistently observed—Texas and California — increased only 2,315 bbls. per day and 3,017 bbls. per day, respectively.

The production of the United States for the 12 months ending October 31 will show a further increase but there is nothing to indicate yet that the year 1928 will see as great a production of oil in the United States as 1927, due to the conservation measures practiced in Oklahoma, California and Texas.

The daily average production changes in September as compared with August were: California, increase 3,017 bbls.; Oklahoma, increase 76,288 bbls.; Texas, increase 2,305 bbls.; Kansas, increase 57 bbls.; Arkansas, decrease 2,808 bbls.; Louisiana, decrease 10,680 bbls.; Rocky Mountain, decrease 1,559 bbls.; fields east of the Mississippi River, decrease 1,200 bbls. (estimated); total increases, 81,667 bbls.; total decreases, 16,249 bbls.; net increase 65,420 bbls.

Following is the production by pool in the Mid-Continent, Gulf coastal, Southwest Texas and Rocky Mountain Fields, and a summary of the production by state:

SUMMARY BY PRODUCING DIVISIONS
Crude Oil Production in the United States in September, 1928

	Dly. av. bbls.	Month bbls.
Oklahoma	748,562	22,456,860
California	630,272	18,908,169
Texas	718,475	21,554,260
Kansas	101,575	3,047,250
Arkansas	84,669	2,540,070
Louisiana	60,987	1,829,625
Montana	11,229	336,870
Wyoming	59,730	1,791,900
Colorado	6,961	208,830
New Mexico	3,161	94,830
*Eastern fields	114,000	3,420,000
Total September	2,539,621	76,188,664
Total August	2,474,200	76,700,212
Difference	65,421	511,548

*Estimated.

MID-CONTINENT FIELDS

	Dly. av. bbls.	Month bbls.
Kansas	101,575	3,047,250
Oklahoma	748,562	22,456,860
North Texas	97,193	2,915,790
Central Texas	52,621	1,578,630
West Texas	343,627	10,308,816
Panhandle Texas	63,237	1,897,110
East Central Texas	23,715	711,450
Arkansas	84,669	2,540,070
North Louisiana	39,264	1,177,920
Total September	1,554,463	46,633,896
Total August	1,487,289	46,105,899
Difference	70,482	527,997

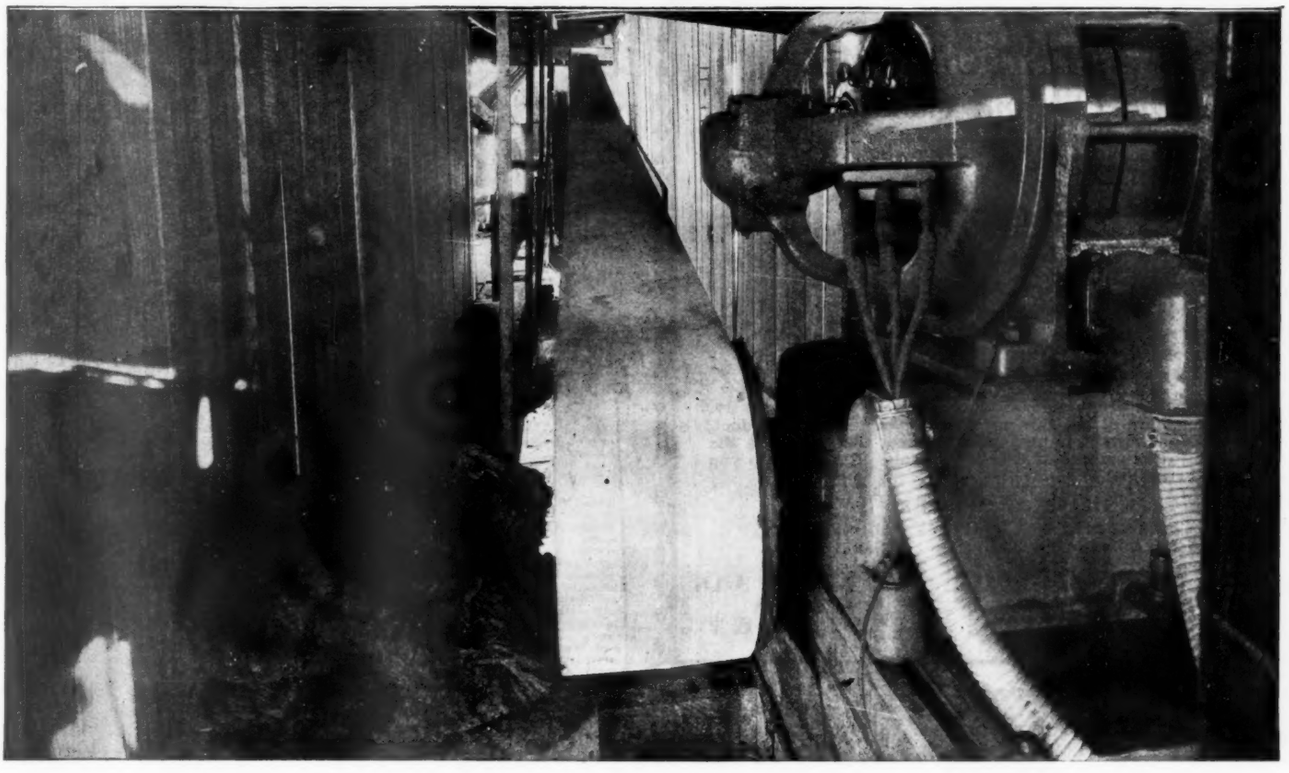
GULF COAST AND SOUTHWEST TEXAS

	Dly. av. bbls.	Month bbls.
Gulf Coast (Tex.-La.)	131,654	3,949,651
Southwest Texas	28,151	844,550
Total September	159,805	4,794,201
Total August	161,767	5,014,824
Difference	1,962	220,623

OKLAHOMA
Daily Average and Monthly Production in September

	Dly. av. bbls.	Month bbls.
Washington County	5,575	167,250
Nowata County	5,322	159,660
Rogers County	2,248	67,440
Osage and eastern Kay Counties:		
Burbank	29,205	876,150
Osage, outside Burbank	26,632	798,960
Total	55,837	1,675,110
Tulsa and Wagoner Counties:		
Bird Creek, Owasso, etc.	3,795	113,850
Red Fork, Sand Springs, Turkey Mt., Bruner	1,977	59,310
Bixby, Leonard, Jenks	1,816	54,480
Broken Arrow, Coweta	1,097	32,910
Total	8,685	260,550
Okmulgee and Muskogee Counties:		
Mounds and Beggs	6,616	198,480
Bald Hill and Haskell	3,517	105,510
Morris, Boynton, Cole	2,179	65,370
Okmulgee	2,636	79,080
Tiger Flats, Schulter	1,078	32,340
Total	16,026	480,780
Okmulgee, Okfuskee, Seminole and Pottawatomie Counties:		
Seminole area:		
Seminole City	45,766	1,372,980
Bowlegs	49,037	1,471,110
Little River	116,998	3,509,940
Earlsboro	88,590	2,657,700
Searight	11,662	349,860
Total Seminole	312,053	9,361,590
Pearson-St. Louis-Maud, Henryetta, Deaner-Lyons, etc.	111,087	3,332,610
Wewoka	7,256	217,680
Cromwell	5,485	164,550
Papoose-Gilcrease	7,847	235,410
Jarvis-Holm	4,027	120,810
Weleetka	577	17,310
Wetumka	702	21,060
Yeager	39	1,170
Miscellaneous	399	11,970
	2,447	73,410
Total	451,919	13,557,570
Creek County:		
Glen Pool, Sapulpa and Kiefer	6,007	180,210
Cushing-Shamrock	18,646	559,380
Bristow, Kelleyville and Depew	14,689	440,670
Pickett Prairie, North Bristow	1,834	55,020
Eastern Bristow or Slick	7,717	231,510
Total	48,893	1,466,790
Pawnee County:		
Cleveland	2,739	82,170
Keystone	1,755	52,650
Jennings	2,549	76,470
Otoe	721	21,630
Ralston-Masham	181	5,430
Total	7,945	238,350
Payne County:		
Yale, Quay, Ingalls	4,787	143,610
North and South Cushing	1,633	48,990
Mehan-Ripley	1,332	39,960
Total	7,752	232,560
Lincoln County:		
Stroud	1,071	32,130
Davenport	1,954	58,620
Kendrick	266	7,980
Total	3,291	98,730
Kay, Grant and Noble Counties:		
Blackwell	1,150	34,500
Vernon	1,274	38,220
Otstot	1,054	31,620
Garrett	51	1,530
Deer Creek	742	22,260
Ponca City	790	23,700
Mervine	330	9,900
North Braman	2,790	83,700
South Braman	1,255	37,650
Hubbard	2,693	80,790
Thomas	1,070	32,100
Tonkawa	12,436	373,080
Billings	156	4,680
Miscellaneous	323	9,690
Total	26,114	783,420
Garfield County:		
Garber	8,499	254,970

IT PAYS TO BUY THE BEST



The special service demanded from mechanical rubber goods both in the oil field and in refinery duty is met by the special construction of Goodyear Belts, Hose, Valves and Packing.

In pumping and drilling, for example, ordinary belting quickly succumbs under the repeated and heavy variations in load. The ply construction of Goodyear Belts is designed to stand up under this punishment, insuring long economical wear.

Other severe duty is also imposed on the belt in the field, as every oil man knows. The pulling of casing, tubes and rods, the bailing out of wells, and similar routine or emergency work further calls for a strong, flexible belt, built as Goodyear Belts are built, with a special understanding of oil field needs.

Goodyear Belts and other mechanical rubber goods for the oil industry are all specified to their duty by the G.T.M.—Goodyear Technical Man. The G.T.M. is an expert on belting. He knows the demands of the oil industry. You may rely on any Goodyear Mechanical Rubber Goods that he may recommend to give you more efficient, uninterrupted and trouble-free service.

TRANSMISSION BELTS—*Cord Oil Well, Thor Oil Well, Goodyear, Wingfoot* • HOSE —*Air, Water, Steam, Gasoline, Fire, Mill* • OIL SUCTION *or* DISCHARGE HOSE • ROTARY HOSE • PACKING—*Asbestos and Rubber Sheet for both field and refinery service* • PUMP VALVES • SLUSH PUMP SLEEVES • SWAB RUBBERS.

For detailed information about the work of the G. T. M., the Goodyear Analysis Method and Goodyear products for your industry, write to Goodyear, Akron, Ohio, or Los Angeles, Calif.

The Greatest Name in Rubber

GOODYEAR

Copyright 1928, by The Goodyear Tire & Rubber Co., Inc.

ASCO STEEL

STANDS SUPREME

In the Oil and Gas Fields

Every step in the production of Asco Steel is watched closely. From the selection of the raw materials to the finished product, the first thought always is to produce a steel that will give the best results to the makers of Oil Well Tools. Can we help you to produce better tools?

DISTRICT OFFICES

541 McCormick Bldg., Chicago, Ills.

503 Philtower Bldg., Tulsa, Okla.

THE ANDREWS STEEL CO.

NEWPORT KENTUCKY

That new Bristol's Model 11-M Recording Pressure Gauge

Developed especially for use where exposure to dust, fumes, moisture, etc., is unavoidable, this model Bristol's Gauge is suitable for installing out-of-doors on oil or gas pipe lines, gas storage tanks, at gas or oil well, stills, etc., etc.

Instrument case is made of aluminum alloy—(not zinc)—which prevents rusting. Entire case front is designed to swing open, thus giving ready access to interior parts and facilitating easy changing of charts.

The pear-shaped Original "Bristol's Form" employed in the design of this instrument is ideal for most efficient mounting of operating mechanism. The long penarm is direct connected to measuring element, and due to this fact records over entire chart scale with minimum expansion strain on pressure element. No multiplying devices whatsoever are used. All of which makes for accuracy, trouble-free operation, and exceptionally long service life.

THE BRISTOL COMPANY

Waterbury, Connecticut

SALES ENGINEERING SERVICE WITHOUT OBLIGATION. WRITE FOR CATALOGS AND BULLETINS.

Logan County:		
Marshall	8,149	244,470
Lovell	1,284	38,520
Total	9,433	282,990
Carter County:		
Healdton	13,891	416,730
Hewitt	8,957	268,710
Graham	3,689	110,670
Fox	2,802	84,060
Brock	726	21,780
Sholom Alechem	14,444	433,320
Total	44,509	1,335,270
Stephens and Cotton Counties:		
Loco-Milroy	1,768	53,040
Comanche	3,256	97,680
Duncan	4,785	143,550
Walters	994	29,820
Kilgore	207	6,210
Total	11,010	330,300
Jefferson County:		
Hambro	2,447	73,410
Caddo County:		
Cement	1,772	53,160
Garvin County:		
Robberson	2,074	62,220
Grady County:		
Knox	6,311	189,330
Pontotoc County:		
Allen	22,485	674,550
Beckham County:		
Sayre	46	1,380
Marshall County:		
Madill	369	11,070
Total September	748,562	22,456,860
Total August	672,274	20,840,494
Difference	76,285	1,616,366

KANSAS

Daily Average and Monthly Production in September

	Dly. av. bbls.	Month bbls.
Marion County:		
Florence-Urschell	309	9,270
Peabody	1,065	31,950
Covert-Sellers	444	13,320
Lost Springs	1,420	42,600
Total	3,238	97,140
Butler County:		
Elbing	2,085	62,550
Potwin	467	14,010
Cameron-Robinson	470	14,100
Wilson-Dunkle	1,581	47,430
Towanda	2,269	68,070
Fox-Bush	939	28,170
Nuttle-Koogler	1,496	44,880
Eldorado	7,246	217,380
Smock	175	5,250
Leon-Weaver	6,959	208,770
North Augusta	915	27,450
South Augusta	1,300	39,000
Sluss	277	8,310
Douglass	126	3,780
Keighly	1,022	30,660
Benton	21	630
Blankenship	786	23,580
Total	28,134	844,020
Greenwood and Woodson Counties:		
Sallyards	1,390	41,700
Teeter-Pixley-Scott	6,123	183,690
Virgil	7,788	233,640
Thrall-Burkett	1,710	51,300
Seeley	6,242	187,260
Polhamus	1,002	30,060
Miscellaneous	1,504	45,120
Total	25,759	772,770
Cowley County:		
Rainbow Bend	1,122	33,660
Slick	552	16,560
Graham	433	12,990
Rock	169	5,070
Clark	157	4,710
Eastman	486	14,580
Winfield-New Salem	1,939	58,170
Miscellaneous	711	21,330
Total	5,569	167,070
Other counties:		
Sumner	18,832	564,960
Sedgwick	1,680	50,400
Rice	1,086	32,580
Russell	4,080	122,400
Reno	41	1,230
Rooks	45	1,350
Harvey	36	1,080
Coffey	265	7,950
Chautauqua	2,204	66,120
Elk	2,337	70,110
Wilson	191	5,730
Montgomery	1,512	45,360
Allen	594	17,820
Neosho	503	15,090
Lyon	1,005	30,150
Miami	1,628	48,840
Franklin	423	12,690
Douglas	19	570
Bourbon	20	600
Linn	212	6,360
Anderson	1,711	51,330
Labette	24	720
Chase	25	750
Woodson	402	12,060
Total September	101,575	3,047,250
Total August	101,518	3,147,058
Difference	57	99,808

NORTH TEXAS

Daily Average and Monthly Production in September

	Dly. av. bbls.	Month bbls.
Burkburnett	11,162	334,860
Electra	12,450	373,500
Iowa Park-K-M-A	3,205	96,150
Archer County	19,811	594,330
Clay County	487	14,610
Wilbarger County	31,016	930,480
Montague County	8,382	251,460
Young County	8,088	242,640
Baylor County	91	2,730
Cook County	2,501	75,030
Total September	97,193	2,915,790
Total August	101,651	3,151,181
Difference	4,458	235,391

CENTRAL TEXAS

Daily Average and Monthly Production in September

County—	Dly. av. bbls.	Month bbls.
Coleman	3,514	105,420
Comanche	168	5,040
Stephens	6,788	203,640
Eastland	10,900	327,000
Brown	10,898	326,940
Callahan	3,395	101,850
Erath	276	8,280
Throckmorton	789	23,670
Jack	1,694	50,820
Palo Pinto	422	12,660
Shackelford	10,469	314,070
Jones	3,308	99,240
Total September	52,621	1,578,630
Total August	48,360	1,499,160
Difference	4,211	79,470

EAST CENTRAL TEXAS

Daily Average and Monthly Production in September

	Dly. av. bbls.	Month bbls.
Boggy Creek	2,156	64,686
Cedar Creek	351	10,540
Currie	621	18,615
Mexia	6,644	199,324
Minerva	802	24,060
Nigger Creek	508	15,235
Powell	10,452	313,556
Richland	486	14,579
Thrall	22	645
Wortham	1,673	50,200
Total September	23,715	711,450
Total August	23,324	723,016
Difference	391	11,566

WEST TEXAS

Daily Average and Monthly Production in September

Field and county—	Dly. av. bbls.	Month bbls.
Big Lake, Reagan	17,294	518,829
Chalk, Howard	21,167	635,019
Church-Fields, Crane	30,152	904,567
Connell, Ector	6	180
Harding, Howard	17	517
Hendricks, Winkler	172,374	5,171,213
Ira, Scurry	31	930
Leck, Winkler	679	20,335
McCamey-Taylor, Upton	10,729	321,863
McElroy, Crane	13,695	410,856
McMillan, Runnels	59	1,770
Powell, Crockett	2,604	78,122
Scarborough, Winkler	.....	.....
Settles, Glasscock	.....	.....
Stephens, Fisher	736	22,063
Skelly, Reagan	48	1,440
Waddell, Crane	15	450
Westbrook and Iatan, Mitchell	2,788	83,645
Wheat, Loving	309	9,281
Yates, Pecos	70,925	2,127,736
Total September	343,627	10,308,816
Total August	349,249	10,826,687
Difference	5,622	517,871

TEXAS PANHANDLE

Daily Average and Monthly Production in September

County—	Dly. av. bbls.	Month bbls.
Hutchinson	32,527	975,810
Carson	6,284	188,520
Gray	22,366	670,980
Moore	1,282	38,460
Potter	17	510
Wheeler	761	22,830
Total September	63,237	1,897,110
Total August	63,236	1,960,316
Difference	1	63,206

NORTH LOUISIANA

Daily Average and Monthly Production in September

	Dly. av. bbls.	Month bbls.
Caddo, light	9,164	274,920
Caddo, heavy	3,107	93,210
Homer	4,259	127,770
Haynesville	5,805	174,150
De Soto-Red River	3,922	117,660
Elm Grove	534	16,020
Bellevue	779	23,370
Cotton Valley	4,554	136,620
Urania	6,609	198,270
Pleasant Hill	531	15,930
Total September	39,264	1,177,920
Total August	40,200	1,246,200
Difference	936	68,280

ARKANSAS

Daily Average and Monthly Production in September

	Dly. av. bbls.	Month bbls.
El Dorado	5,217	156,510
Smackover, light	7,352	220,560
Smackover, heavy	55,887	1,676,610
Stephens	1,026	30,780
Nevada County	1,235	37,050
Lisbon	1,891	56,730
Bradley	100	3,000
Champagnolle	11,961	358,830
Total September	84,669	2,540,070
Total August	87,477	2,711,787
Difference	2,808	171,717

SOUTHEAST TEXAS

Daily Average and Monthly Production in September

	Dly. av. bbls.	Month bbls.
Allen Dome	27	885
Barbers Hill	614	18,420
Batson	1,380	41,394
Big Creek	3,071	92,137
Blue Ridge	7,844	235,313
Brenhan	148	4,430
Boling	1,789	53,677
Damon Mound	646	19,390

THERE'S ONLY ONE
WELDLESS DRILLING JAR

Most regular drilling jars fail as the result of destructive welding heats. Spang Drilling Jars cannot fail in this manner because they are made from a single billet of alloy steel. No welds or destructive heats are required.

SPANG AND COMPANY

BUTLER **PENNA.**

SOLD BY ALL LEADING SUPPLY HOUSES

H.T.P.

HEAT TRANSFER PRODUCTS

Designers and builders of general engineering equipment for

Power Plants — Refrigeration Plants
Chemical Plants — Air Conditioning
Oil Refineries — Laundries
Gas Plants — Heating & Ventilating
Textile Mills — Paper Mills, etc.

Also equipment for severe duty such as high pressures, high temperatures and unusual corrosive conditions . . . Complete engineering service furnished on any problem in these industries.

HEAT TRANSFER PRODUCTS, INC.
A Division of the
Staten Island Shipbuilding Company
90 West Street, New York, N.Y.

The Cooke Seal Ring

A Mechanical Device Sealing Any Rotating Shaft in the Stuffing Box and Revolving *with* it.

Applications	*Eliminates*
Ammonia	Packing
Sulphur Dioxide	Leaks
Carbon Dioxide	Expense
Gases	Trouble
Air	Scored Shafts
Water	Hot Boxes
Brine	Shut Downs
Gasoline	Dirt
Oils	Motor Overload
Liquids	Oil Waste
Pressure or Vacuum	90% Friction

Write to

COOKE SEAL RING

Dept. H

36 NORTH GREEN ST., CHICAGO, ILL.

DeWalt	399	11,969
Fannette	146	4,380
Goose Creek	6,687	200,629
High Island	552	16,552
Hull	11,520	345,598
Humble	3,306	99,191
Markham	358	10,731
Nash Dome	1,084	32,515
North Dayton	774	23,210
Orange	3,607	108,219
Orchard	301	9,023
Pierce Junction	9,944	298,313
Raccoon Bend	1,424	42,710
Saratoga	1,044	31,340
Sour Lake	3,281	98,449
S. Liberty and S. Dayton	3,588	107,651
Spindletop	39,204	1,176,128
West Columbia	7,193	215,785
Total	109,931	3,297,946
Louisiana—		
Anse La Butte	59	1,755
Atchafalaya	1,003	30,082
East Hackberry	2,881	86,425
Edgerly	990	29,703
Evangeline	975	29,247
Lockport	3,399	101,965
Sorrento	1,169	35,066
Starks	1,304	39,133
Sulphur	2,457	73,725
Sweet Lake	3,156	94,700
Vinton	4,330	129,904
Total	21,723	651,705
Total Gulf Coast Sept.	131,654	3,949,651
Total Gulf Coast Aug.	135,301	4,194,356
Decrease	3,647	244,705

SOUTHWEST TEXAS
Daily and Monthly Production for September

	Dly. av. bbls.	Month bbls.
Dale	848	25,452
Kingsville	303	9,105
Luling	13,871	416,135
Lytton Springs	1,236	37,051
Somerset	2,006	60,195
Mirando and Miscel.	9,887	296,612
Total September	28,151	844,550
Total August	26,466	820,468
Increase	1,685	24,082

WYOMING
Daily Average and Monthly Production for September

	Dly. av. bbls.	Month bbls.
Alkali Butte	138	4,140
Ant Hills	13	390
Big Muddy	2,716	81,480
Oregon Basin	3,938	118,140
Byron	33	900
Dutton	66	1,980
Elk Basin	983	29,490
Ferris	66	1,980
Grass Creek	2,233	66,990
LaBarge	1,791	53,730
Lance Creek	627	18,810
Lost Soldier	3,896	116,880
Osage	423	12,690
Poison Spider	811	24,330
Rock Creek	2,604	78,120
Mule Creek	619	18,570
Lander	422	12,660
Salt Creek	38,200	1,146,000
Simpson Ridge	65	1,950
Teapot Dome	89	2,670
Total September	59,730	1,791,900
Total August	61,596	1,909,476
Difference	21,866	117,576

MONTANA
Daily Average and Monthly Production in September

	Dly. av. bbls.	Month bbls.
Cat Creek	1,573	47,190
Kevin-Sunburst	9,541	286,230
Lake Basin	115	3,450
Total September	11,229	336,870
Total August	10,600	328,600
Difference	629	8,270

COLORADO
Daily Average and Monthly Production in September

	Dly. av. bbls.	Month bbls.
Craig	1,111	33,330
Fort Collins	2,512	75,360
Florence	1,129	33,870
Iles	1,573	47,190
Tow Creek	491	14,730
Walden	27	810
Rangely (est.)	95	2,850
Boulder (est.)	23	690
Total September	6,961	208,830
Total August	7,568	234,608
Difference	607	25,778

NEW MEXICO
Daily Average and Monthly Production for September

	Dly. av. bbls.	Month bbls.
Artesia	954	28,620
Cap Rock (Maljamar)	155	4,650
Hog Back	515	15,450
Rattlesnake	1,097	32,910
Table Mesa	140	4,200
Lea and Eddy—Miscel.	300	9,000
Total August	2,876	89,156
Total September	3,161	94,830
Difference	285	5,674

CONSIDER DISPOSAL OF CRANKCASE OIL

(Continued from Page 144)

oil, rather than merely regulatory as to how this oil shall not be disposed of.

With this purpose in view and the local conditions becoming acute, the sewer department detailed an inspector to the duty of systematically inspecting every place of business in the district which might have accumulations of waste oils, reporting upon the maintenance of intercepting traps, their condition and contents, the apparent disposition of waste oils and the matter of advising the operators of such premises as to the district's requirements and regulations.

This new activity has resulted in more than 100 places being required to install garage traps and several hundred being required to clean the traps of oil and silt, within the past year. This work, while considered preliminary to the actual intentions of the sewer department in adopting further measures, has shown such excellent results that it is expected it will be continued and probably expanded.

Baltimore Method

Particular interest was centered in the method adopted by the city of Baltimore in its method of handling the problem. As may be noted, that city has made the retention of waste oils compulsory and the method of disposition is subject to city supervision and approval. The occupants or operators of premises having accumulations of waste oil may dispose of it themselves, otherwise an authorized collector (contractor) will remove it without charge.

With all the information cited at hand, together with reports from the United States Bureau of Standards, the plumbing regulations of the District of Columbia were recommended to be revised in this respect and amended to require the maintenance, by garages, auto repair shops and filling and service stations, of approved containers or underground tanks (separate and apart from garage traps) for the retention of all waste crankcase oils, the contents of the same to be removed by the occupant upon notice from district authorities. Regulations for its safe transportation and disposition are also included in the proposed amendments.

The adoption of these regulations will, of course, necessitate the devising of safe and systematic means of disposition. The dumps in the district and vicinity have prohibited the disposal of such refuse (waste oil or contents of garage traps) and in order that the public may be fully protected in the matter of disposing of its accumulations of waste oil retained under such regulations, particularly as to the more or less isolated sections being properly provided with disposal service, a proposal is being submitted for approval whereby a contract may be made under competitive bidding for the collection, transportation and disposition of such waste oil as may become available. Such service as may be contracted for will be guaranteed by proper bond, regulated by direct supervision of the district government as to scope of service, maintenance of facilities for collection and disposition and all other conditions which will make for thorough and systematic service.

Contract Work

In view of the fact that the rerefined product has been determined usable and valuable, it is expected that this service will be without cost to either the district or the public, the contractor realizing his earnings from the ownership of the available oils so collected. No monopoly is to be granted the contractor except requests made by the public on the district for the removal of oil will become an order on the contractor for the rendering of this service. The occupant or operator of any premises may also dispose of the oil retained in any manner which is in accordance with the regulations.

Under these conditions it is estimated that 200,000 gallons of waste oil should be available for collection annually. It is believed that the public will be quick to realize the importance attaching to its exclusion from the sewers as well as the advantage to be gained from free and regular removal, especially the latter as it costs the operator some 2 to 3 cents per gallon to have it removed when deposited with silt in garage traps. A decided improvement in the condition of the public sewers may confidently be expected from the adoption of these measures, the

dangers from fires and explosions in sewers minimized and the encouragement of a comparatively new commercial development and the conservation of thousands of gallons of oil which has heretofore been a source of danger and expense.

The foregoing survey and study was conducted by Hermon Garner, assistant engineer, and by the author of this report, Bruner E. Lundy, sewer department, under the supervision of J. B. Gordon, sanitary engineer for the District of Columbia. The report is now under consideration of Colonel William B. Ladue, Corps of Engineers, United States Army, Engineers Commissions of the District of Columbia.

ASSOCIATED EQUIPS SPECIAL AUTOMOBILES

(Continued from Page 143)

ing these two compression ratios and two gasolines.

"It will be apparent, of course, that the mileage would be different if one happened to be driving into a head wind than it would be if the car were coasting with the wind. In order to eliminate this factor from the tests, the car was run several times in each direction, and the results averaged so that the wind effect would be eliminated."

MAGNETOMETER SURVEY OKLAHOMA AREAS

(Continued from Page 37)

cates the presence of a magnetic anticline with the axis running slightly northeast and southwest, passing through Nowata, Tulsa, Sapulpa, Okemah, east of Holdenville and Tishomingo. Additional traverses running east and west across this axis should shed some light on the possibility of an arch as suggested in Oklahoma Geological Survey Bulletin No. 40-J.

Wichita Mountain Area

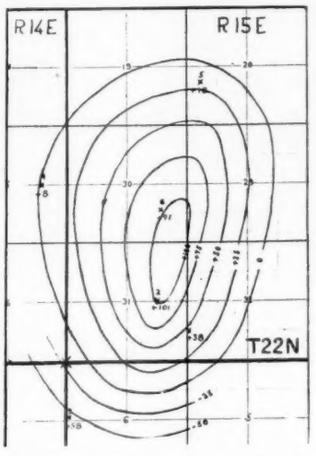
The Wichita Mountains also have a considerable effect upon the distribution of the earth's magnetic field in their vicinity. As in the case of the Arbuckle Mountains, the Wichita range also shows up as a decided magnetic high.

So far very little use has been made of actual intensities in interpreting depth to granite or other buried igneous rock. In this connection it is very interesting to note that at Tishomingo the vertical intensity is .5703 gauss and at Hobart the vertical intensity is .5694 gauss, practically the same as at Tishomingo.

Anadarko Basin

The area located immediately west of the Red Beds plains region is known as the Gypsum Hills region. [5] "It contains all or parts of the following counties: Woods, Harper, Woodward, Major, Dewey, Blaine, Canadian, Custer, Washita, Beckham, Greer, Harmon, Jackson, Kiowa Commanche and Caddo.

"The Anadarko Basin is the major structural feature of this area. It is a broad trough or basin occuring north of the Wichita Mountains in western Oklahoma. The axis of this basin reaches from northeastern Stephens County, a few miles northwest of the west end of the Arbuckle Mountains, in a southeast-



Magnetometer survey—contour interval 25 gamma. Earl A. Trager.

northwest direction across Grady, Caddo, Washita, Beckham and Roger Mills Counties and on into the Panhandle of Texas."

A general sketch of the Anadarko Basin from a geological basis is shown in Plate 4. The reader is also referred to other maps of this area to be found in Oklahoma Geological Bulletins 40-P and 40-D.

Plate 2 shows a somewhat similar picture of the Anadarko Basin. It is seen that the axis of the basin has a general northwest-southeast direction and passes thrcugh Cordell, Apache and Rush Springs or perhaps a little south of Rush Springs.

The deepest part of the Anadarko Basin, as indicated by the magnetic survey, is at Apache, in southern Caddo County. Also the rim of this basin would

[5] Bulletin 42, Oklahoma Geological Survey.

MAGNETOMETER SURVEY OVER A SHALLOW GRANITE DOME

Below is given the field data taken for a typical magnetometer survey over a shallow granite dome. Computations made in working up the data are also given. Because of the small area involved no corrections for latitude or longitude have been applied.

Maps published through courtesy of Luther White and Earl A. Trager.

Operator..... Location—Oklahoma, Township 22n, Range 15e.
Date—March 12, 1928.
Instrument No..... K 28.3 "a" 8
Base Stations Occupied.....
Size and Position of Aux. Magnet.....Small, N end up at 250 mm.

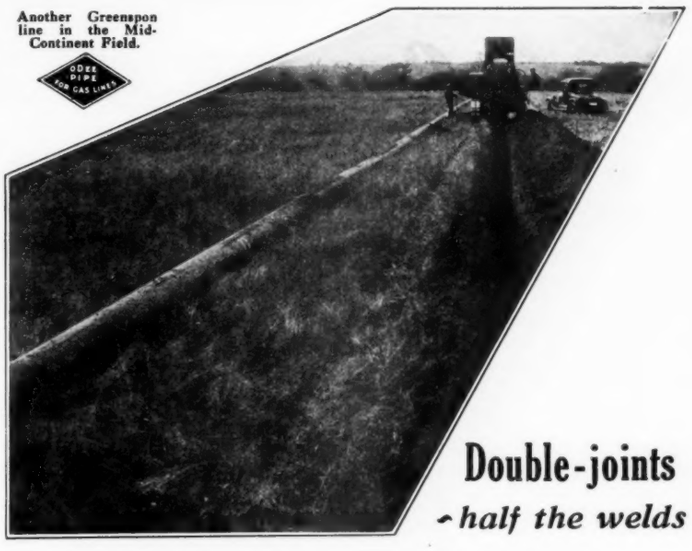
STAT.	TIME	TEMP	ΔT	"a" CAT	DEP. N-E	DEP. N-W	AV. DEP.	ΔX	KAX	DZ'	C	DZ"	REG	dZ	NET DZ.
1	1:13	25.2	0	0	+10.1	+11.1	+10.6	0	0	0	NO CORRECTION NECESSARY	SAME AS DZ'	NO REGIONAL APPLIED	SAME AS DZ'	SAME AS DZ'
2	1:38	24.8	-0.7	-5.6	+13.9	+14.8	+14.35	+3.75	+106	+101					
3	2:00	24.9	-0.3	-2.4	+8.1	+9.1	+8.6	-2.0	-56.4	-58					
4	2:30	26.0	+0.8	+6.4	+10.5	+11.0	+10.65	+.05	+1.4	+8					
5	3:15	27.0	+1.8	+14.4	+10.3	+11.1	+10.70	+.1	+2.8	+17					
6	4:00	27.0	+1.8	+14.4	+12.8	+13.8	+13.3	+2.7	+76.5	+91					
1	4:40	25.2	0	0	+10.1	+11.1	+10.6	0	.0	0					

SECOND EXAMPLE, MAGNETOMETER SURVEY OVER A SHALLOW GRANITE DOME

Operator..... Location—Oklahoma, Township 21n, Range 13e.
Date—March 12, 1928.
Instrument No..... K 28.3 "a" 8
Base Stations Occupied.....
Size and Position of Aux. Magnet.....Small, N end up at 250 mm.

STAT.	TIME	TEMP	ΔT	"a" CAT	DEP. N-E	DEP. N-W	AV. DEP	ΔX	KAX	DZ'	C	DZ"	REG	d	NET DZ
1	9:06	19.0	0	0	+0.5	+1.5	+1.0	0	0	0	NO CORRECTION NECESSARY AS FAILURE TO CLOSE WAS ONLY 40mm	SAME AS DZ'	AREA COVERED BY SMALL NO REGIONAL APPLIED	SAME AS DZ'	SAME AS DZ'
2	9:15	19.1	+0.1	+0.8	+3.5	+4.2	+3.8	+2.8	+79.5	+80.0					
3	9:40	19.2	+0.2	+1.6	+7.0	+8.0	+7.5	+6.5	+185.5	+186.0					
4	10:02	19.8	+0.8	+6.4	+2.5	+3.7	+3.1	+2.1	+59.4	+66.0					
5	10:23	20.2	+1.2	+9.6	+1.1	+2.0	+1.6	+1.8	+51.0	+60.6					
6	10:40	21.2	+2.2	+17.6	+0.8	+1.5	+1.7	+0.7	+19.8	+37.4					
7	10:55	22.1	+3.1	+24.8	+0.2	+1.5	+0.8	-0.2	-5.6	+19.2					
8	11 07	22.2	+3.2	+25.6	-0.2	+0.5	+0.2	-0.8	-21.0	+2.6					
9	11:20	22.5	+3.5	+28.0	+0.5	+1.5	+1.0	0	0	+28.0					
1	11:37	23.0	+4.0	+32.0	-0.2	+0.2	0	-1	-28.3	+4.0					

Another Greenspon line in the Mid-Continent Field.



Double-joints
- half the welds

Greenspon's ODEE pipe for gas lines saves you 50% of the field welding. Double lengths are made up at our plant, with ends cut smooth and beveled for easy, perfect joints in the field.

Deliveries are always on time—the pipe is in the field when wanted. Write, wire or 'phone for quotations on any size gas or oil pipe or casing.

Jos. GREENSPON'S Sons
IRON & STEEL COMPANY
TULSA ST. LOUIS NEW YORK CITY WHEATLAND, PA.

55,000 barrels. Angus Texas Refinery, Angus, Texas

STANDARD
OIL STORAGE TANKS

Tanks of standard designs and capacities are carried in stock at both Pittsburgh-Des Moines shops—in Pittsburgh and in Des Moines. These are completely fabricated and ready for immediate shipment. Write for prices to the office nearest you.

Special tanks of any size, for any purpose, will be quickly designed, fabricated and shipped to meet unusual requirements.

Consult the nearest Pittsburgh-Des Moines office on any work where tanks or plate work will be included.

Pittsburgh-Des Moines Steel Company
13 Neville Island, Pittsburgh — 1227 Praetorian Bldg., Dallas — 915 Tuttle St., Des Moines
New York San Francisco Seattle Chicago Atlanta

TRADE Leader MARK

ALL-STEEL DRAIN RACK

The Economical Solution of Your Crank Case Draining Problem

Leader All-Steel Drain Racks are made in two sizes—Fig. 616 with runways 24″ high; Fig. 626 with runways 30″ high.

Easily Erected. No foundation is required—simply set rack up on ground. Two men can do it in an hour's time.

Portable. The rack comes knocked down; can easily be moved from one station to another. Especially advantageous for leased stations.

Safe. The runways are so pressed that it is impossible for a car to climb over the sides.

For detailed information send for Bulletin.

Fig. 616; 24″ high: $57.70

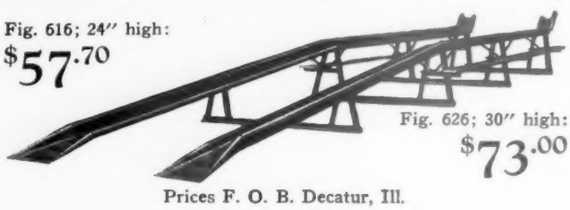


Fig. 626; 30″ high: $73.00

Prices F. O. B. Decatur, Ill.

LEADER IRON WORKS

2130 NORTH JASPER ST. DECATUR, ILLINOIS

21 East 40th Street, New York, N. Y.

Tanks lay four years uncleaned—

Oakite methods quickly removed old oil

AFTER carrying crude and fuel oils for three years, one tank steamer was taken out of service without having her tanks cleaned. For four years she lay idle in this condition until her owners decided to convert her for transporting gasoline.

Attempts were made, with various cleaning methods and materials, to remove the hardened oil deposits from the tanks. But all proved slow, costly and ineffectual until, with Oakite methods, six 3,200-barrel tanks were cleaned thoroughly, in only ten days, with a minimum of hand labor. In fact, so easily was the job done the Oakite way, that costs amounted to only 20% of former methods.

That every trace of old oil was removed is proved by the fact that the first cargo of gasoline carried in the Oakite cleaned tanks was delivered without the loss of a single color point.

It is on tough jobs like this one that Oakite materials show their worth. Let an Oakite Service Man call and prove that you can reduce the cost of any cleaning operation with Oakite methods. Just drop us a line. No obligation.

Oakite Service Men, cleaning specialists, are located in the leading industrial centers of the U. S. and Canada.

Manufactured only by

OAKITE PRODUCTS, INC., 44C Thames Street, NEW YORK, N. Y.

OAKITE

TRADE MARK REG. U.S. PAT. OFF.

Industrial Cleaning Materials and Methods

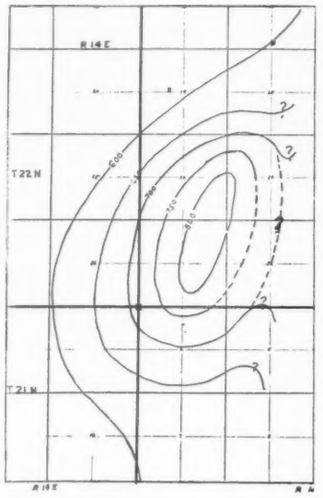
pass through approximately Walters, Lawton, Hobart, Sayre, then into the Panhandle and back to Arnett, Trail, Taloga, Watonga, El Reno, Purcell, Pauls Valley, Duncan and back to Walters.

The general uniformity of the basin is somewhat distorted on the north end by a syncline, the axis of which passes north through Weatherford and Thomas.

It is worthy of mention at this point that a detailed study of the Anadarko Basin across the Cement oil field shows up the Cement anticline as a small magnetic high on the syncline forming the flank of the basin.

The Hunton Arch

[6] "The area known as the Arbuckle uplift should be divided into two distinct parts, the Arbuckle anticline and the Hunton arch. * * *



Approximate surface structure map contoured on Oolagah formation from topographic sheet. White and Trager.

"The Hunton arch is a northward plunging anticlinal nose with an axis slightly west of north-south, trending through western Pontotoc County, northward into the Seminole area. * * *"

The magnetometer results on Plate 1 show that there is a decided magnetic anticline, the axis of which passes slightly northwest and southeast through Tecumseh and thence southward slightly west of Ada.

Other Magnetic Features

Other magnetic features not associated with any of the well-known major geological features follow:

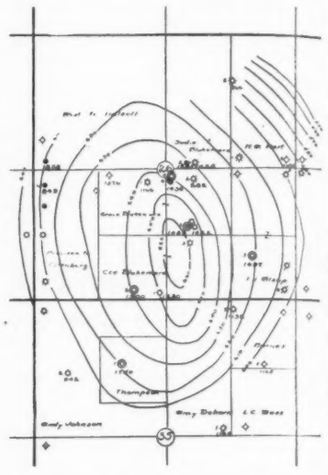
Plate 1 shows a magnetic anticline extending southwest from the Kansas border line as a direct continuation of the anticline through Medicine Lodge, Kans. (Refer to "A Magnetometer Study of Kansas," The Oil and Gas Journal.) This structure continues across the State of Oklahoma with the axis passing through Medicine Lodge (Kansas), Alva, Watonga, Taloga, Arapaho, Cordell and Hobart.

There is also another anticlinal structure starting at Wellington (Kansas), with the axis through Wellington, Medford, Hunter, Enid and Fairview.

Plate 2 shows these anticlines broken up in a series of closed highs and lows. The more prominent of these are the elongated high between Alva and the Kansas border line and the dome-like structure at Hunter.

It also appears in Plate 2 that there is a valley-like trough with its axis through Newkirk, Perry, Marshall and Chandler. The rim of this trough would appear to be through Wellington, Pawhuska, Pawnee, Tulsa, Sapulpa, Okemah, Tecumseh, Norman, Watonga, Okeene, Enid, Hunter and Medford, thence north to Anthony.

Before going into any detailed discussion of these above-mentioned anomalies with the view of determining the desirability of a more detailed study it would be best to make a brief analysis of some of the already existing oil fields and their general relation to the magnetic reliefs. In this way it will perhaps be possible



Surface structure contoured on top "Big Lime," 1,426 feet total depth of well. Open circles, Wilcox wells. Solid circles, water wells.

to determine a general rule which can then be applied to these additional and as yet undeveloped areas.

[6] Oklahoma Geological Survey Bulletin 40-J.

EASTERN FIELDS

(Continued from Page 60)

O'Hara farm. In the same township, Perry Sturm is drilling on the James Thomas farm. In Enoch Township, Noble County, J. H. Jerain & Co. have a 5-bbl. pumper on the Lawrence Crum farm.

In the SE of Section 10, Bowling Green Township, Licking County, the Ohio Fuel Supply Co. has drilled through the Clinton sand a test on the J. H. Cooperrider farm. It is dry and abandoned. In Section 6, Lawrence Township, Washington County, the J. B. Braden Oil Co. has started to drill a second test on the William Cooper farm.

Monroe County Busy

In Section 2, Franklin Township, Monroe County, Lugas, Thornberry and others have completed in the Squaw sand a test on the C. H. Hines farm. It is a 10-bbl. pumper. In Section 6, Center Township, I. J. Denbow & Co. have a 5-bbl. pumper in the Maxon sand at No. 9 on the Louisa Kerr farm.

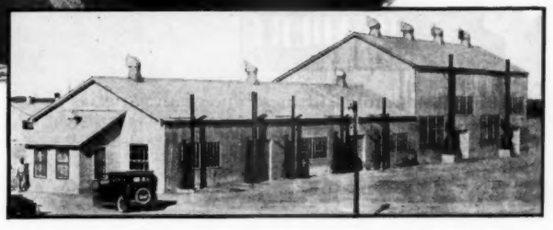
One-fourth mile northeast of the test, a dry hole, on the J. A. Riggle farm, Orange Township, Carroll County, Edward Risser has a duster in the Berea grit at a test on the Baker farm. In Franklin Township, Monroe County, the Shay & McMullen Co. has a gasser at a test on the W. W. Sutton farm. In the same township, the Woodsfield Oil & Gas Co. has started to drill on the Joseph Turner farm. In Bethel Township, M. Stofel and others have started to drill a test on the J. H. Morrison farm. In Green Township, S. Hamilton and others have a duster at a test on the A. Stine farm. At present there is more work under way and starting in Monroe County than at any other time in five years.

In Newport Township, Washington County, W. C. Noland has a light pumper in the first Cow Run sand at No. 9 on his own farm. Zomberley Brothers have a rig up on the J. Greenwood farm.

In Section 2, Jackson Township, Knox County, the Preston Oil Co. has started to drill a test on the Joseph Beatty farm. In Brown Township the East Ohio Gas Co. is due in the Clinton sand at a test on the D. C. Whiting farm. In the same township the Ohio Fuel Supply Co. has a rig up for another test on the J. A. Reed farm. In Jefferson Township the East Ohio Gas Co. is drilling on the M. Strang farm.

West Virginia

In New Milton district, Doddridge



Complete Plant or Steel Field Buildings

You Can Profit by Austin Speed

Whether your requirements call for the complete design, construction and equipment of an entire building project, or quick fabrication and delivery of materials for erection by your own crew, this organization is prepared to serve you promptly and efficiently from thirteen strategically situated offices from coast to coast.

Austin Complete Building Service

Many years of first-hand experience with actual field conditions enable Austin to design, construct and turn over completely equipped for use, permanent oil field or refinery buildings of every kind, with a complete guarantee covering total cost, delivery date and quality of materials and workmanship.

Austin Steel Field Buildings

Should you prefer to have your own crew erect the necessary structures, Austin is prepared to deliver steel and other essential materials for field buildings of your own or Austin design anywhere, at any time, with a decided economy in time, worry and expense.

For costs and valuable building data on buildings of all kinds and sizes, get in touch today with the nearest Austin office by phone, wire or memo below.

THE AUSTIN COMPANY, *Engineers and Builders,* CLEVELAND

New York Chicago Philadelphia Detroit Cincinnati Pittsburgh St. Louis Seattle Portland

The Austin Company of California: Los Angeles and San Francisco The Austin Company of Texas: Dallas

"USE THE AIR SERVICE"

AUSTIN

Complete Building Service

Memo to THE AUSTIN COMPANY, *Cleveland—* We are interested in a

---------- -project containing----------sq. ft. Send me a personal copy of

"The Austin Book of Buildings." Individual----------

Firm---------- ----------City----------

O&GJ 11-8-28

Power Piping
FOR EVERY OIL FIELD NEED

Of the many ramifications of this company's service to the oil industry, no feature has better proved our fitness in the field than the special welded work we are called upon to produce.

Headers, manifolds, fittings, pipe of all varieties —welded and fabricated to the most exacting specifications. Prompt and economical, too!

POWER PIPING CO.
PITTSBURGH, PA.

Tops them all

No.10 ELECTRIC LANTERN
LIST PRICE $2.75 LESS BATTERIES
IN CANADA $3.70

Delta No. 10 Electric Lantern is a prime favorite with oil field workers. Its absolute dependability and safety coupled with its sturdy construction and long life, makes it the ideal hand lantern. Throws a powerful beam of light for fully 300 feet and two ordinary dry cell batteries last six months to a year.

Delta ELECTRIC COMPANY
508 DELTA BUILDING MARION INDIANA

MYERS PUMPS FOR EVERY PURPOSE

We are manufacturers of an extensive line of Well, House and Cistern Pumps, Hand and Power Water Systems for homes, farms, country estates, public and private institutions; Self-Oiling Power Pumps and Working Heads for oil and gas fields, mill, mine or factory, railroads, highway and general contractors. Ours is an established line with over fifty years of pump building experience behind it to guarantee quality and dependability.

If you have water problems to solve, either in a large or small way, write us for information and catalog.

THE F.E.MYERS & BRO.CO. Ashland, Ohio.
MANUFACTURERS FOR OVER FIFTY YEARS OF MYERS "HONOR-BILT" PUMPS FOR EVERY PURPOSE • WATER SYSTEMS • HAY UNLOADING TOOLS AND DOOR HANGERS

County, W. L. Travis completed his test on the W. B. Marman farm, a light gasser in the Big Injun sand.

On Lees Run, Spencer district, Roane County, the Hope Construction & Refining Co. has cleaned out an old well on the McConnaughy Brothers' farm, and under gas pressure the well increased its production from almost nothing to 2 bbls. a day. Both gas and air pressure is bringing back with an increased production many of the old wells that had about quit producing.

In Meade district, Tyler County, the American Oil Co. completed a test on the Charles Thistle farm. It is a gasser in the Big Injun sand. In Hackers Creek district, Lewis County, the Standard Gas Co. completed in the Benson sand, at a total depth of 4,180 feet, a test on the Lon Allman farm. It is a gasser.

Lincoln County

In Carroll district, Lincoln County, the Empire State Gas Co. has a gasser in the Berea grit at No. 8 on the James Courts farm. In Jefferson district, Ray & Osborne have a gasser in the same formation at a test on the Robert Vickers farm.

In Clark district, Harrison County, Nathan Goff, Jr., has completed No. 21 on the Nathan Goff farm, a gasser in the Fifth sand. In Union district the Hope Natural Gas Co.'s test on the D. C. Lowther farm is a gasser in the Speechley sand at a total depth of 3,065 feet.

In Troy district, Gilmer County, the Valley Gas Co. completed in the Salt sand a very light pumper on the Howard Keister farm. In Murphy district, Ritchie County, Hays & Roberts had the same luck at No. 5 on the W. W. Lawrence farm.

In McKim district, Pleasants County, the Delong Farm Oil Co. has a duster at No. 31 on the Charles C. and Rebecca Delong farm. It has been abandoned. In Mannington district, Marion County, the Delmar Oil Co.'s No. 41 on the A. J. Hays farm is a gasser.

Boone County Gassers

In Sherman district, Boone County, Godfrey L. Cabot completed No. 27 on the Federal Coal Co.'s tract and No. 2 on the Mary Dickinson farm. Both are gassers. In the same district, the Owens Bottle & Machine Co. has a gasser at No. 15 on the Peytonia Land Co.'s tract. The same company has gassers at No. 14 on the T. W. Bedfors and W. C. Bias farm. All are producing from the Big Injun sand.

On Masters Run of Reedy Creek, Reedy district, Roane County, the Heck Oil Co. completed in the Berea grit a test on the B. H. Kincade farm. Contrary to this company's usual good luck, it is a duster.

As a producer of gas, Boone County, West Virginia, is forging to the front. In Crook district the Owens Bottle & Machine Co. is very active. This company completed in the Big Injun sand No. 6 on the Safe Deposit Trust Co.'s farm. In Scott district the same company has a gasser on the J. W. Chambers farm. In the same district the same company has a gasser at No. 6 on the Little Coal Land Co.'s tract. In the same district the same company's No. 13 on the Pryer-Allen farm is a gasser. In Logan district, Logan County, the Ohio Fuel Gas Co. has a light gasser in the Big Injun sand on the Scott McDonald farm.

In the vicinity of the Midcap farm gusher, in Green district, Wetzel County, the Manufacturers Light & Heat Co. completed in the Big Injun sand a test on the James Elson farm, 200 feet east of Wase & Co.'s test on a part of the same farm. The well is a 2-bbl. pumper. In Magnolia district, same county, the Silver Hill Oil Co. completed a test on the Nixon Frie farm, a duster in the Gordon sand.

Drilling Deeper Helps

On Tanners Creek, DeKalb district, Gilmer County, the South Penn Oil Co. drilled a little deeper No. 9 on the Weaver heirs' farm, increasing its production from 4 to 8 bbls. a day. In the same district the McCall Drilling Co. has a 3-bbl. pumper in the Big Injun sand at No. 6 on the Riddle Brothers' farm. In the same district, M. R. Ellis and others have a rig up on the Ellis farm.

New Work Starting

In Scott district, Boone County, Earl Cameron is rigging up on the L. R. Griffith farm. In Duval district, Lincoln County, the United Fuel Gas Co. has started to drill on the W. E. Hilbert farm. In Jefferson district, the same company is rigging up on the Sarah and Tony Patterson farm. In Union district, Roy & McComas have shut down for orders on the Randolph Sias farm. In McComas district, Cabell County, Cummings Brothers have started to drill on the Amanda Keyser farm. In Grant district, the Harshbarger Oil & Gas Co. has rig material at a location on the Lincoln Land Association tract. In Grant district, Doddridge County, Trainer Brothers are due in the sand on the J. D. Crabtree farm.

In Coal, Sardis and Union districts, Harrison County, the Washington Gas Co., J. W. Johnson and the Hope Natural Gas Co. are drilling deeper wells on the Calder Bailey, E. D. Fitro and D. C. Lowther farms. In Green district, Wetzel County, the Consolidated Oil & Gas Co. has started to drill on the Oliver Cochran farm.

Drilling Test Wells

In Union district, Ritchie County, the Pttsburgh & West Virginia Gas Co. has the rig completed on the E. W. Summers farm. The location is 2,500 feet in advance of production and the Philadelphia Oil Co. owns the oil right on this farm. In New Milton district, Doddridge County, J. F. Trainer has a rig up on the James Kelly farm. On Leatherwood Run, Big Sandy district, Kanawha County, the United Carbon Co. has a rig up on the Osborne farm. In Burning Springs district, Wirt County, Roberts Brothers have the rig completed for No. 164 on the Rathbone Oil tract. In Scott district, Boone County, Earl Cameron is rigging up on the L. R. Griffith farm. In Duval district, Lincoln County, the United Fuel Gas Co. has started to drill on the W. E. Hilbert farm. In Jefferson district, the United Fuel Gas Co. is rigging up on the Sarah and Tony Petterson farm. In Union district, Roy & McComas have shut down for orders on the Randolph Sias farm.

In Union district, Ritchie County, the Pittsburgh & West Virginia Gas Co. has started to drill on the Pinkard Brannon farm. In the same district, it is drilling on the W. W. Summers farm. In Skin Creek district, Lewis County, W. R. Smith is building a rig on the William R. Jewell farm. In Courthouse district, the Mid-Penn Oil Co. has started to drill on the J. P. Cole farm. In Grant district, Ritchie County, T. J. Garriety is rigging up on the J. L. Stanley farm. In Murphy district, J. G. Cochran & Co. have started to drill on the J. G. Cochran farm.

On McFarlan Creek, Murphy district, Ritchie County, the South Penn Oil Co. has the rig completed on the Anna N. Wilson farm. On Alley tract branch of Breeden Creek, Harvey district, Mingo County, the Public Gas Corp. is drilling deeper No. 27 on the Logan Channel Coal Co.'s tract. It was formerly a gasser. On Tanner Run DeKalb district, Gilmer County, the Gainer Farm Oil & Gas Co. has the rig up for another test on the Harriett Gainer farm. In Mannington district, Marion County, the Clifton Oil Co. has a rig up on the Snyder-Metz farm. In Liberty district, Marshall County, the Manufacturers Light & Heat Co. has the rig completed to drill deeper its old test on the D. T. Murphy farm. In Lee district, Calhoun County, Martin Crowley has started to drill on the S. A. Sturms farm.

In Green district, Wetzel County, George Barnus and others have started to drill on the T. J. Blair farm. In the same district, Benedum & Trees have started to drill on the J. Tennant farm. The Transcontinental Oil Co. is drilling on the Charles M. Schramp farm.

In DeKalb district, Gilmer County, Alfred A. Ellis & Co. have a rig up on the M. R. Ellis farm. In Murphy district, C. R. Lewis has a rig up on the J. T. Smith farm. In Otter district,

Typical Foster Tube Still During Erection of Brickwork

The main bank of heating elements of the Foster tube still is seen across the back of the setting. Across the top of the furnace are rows of bare tubes forming the roof. These tubes heat the oil through the absorption of radiant heat.

The partially completed bridge wall in the furnace will shield the heating tubes from radiant heat. The four rows of tubes seen just above the bridge wall are the steam superheater elements.

The main bank of heating surface is composed of very heavy gage tubes upon which is shrunk extended cast iron surface. All joints are outside of the path of gases and all elements are free to expand or contract. A heavy steel frame carries all weight and relieves the brick walls from carrying stresses due to expansion of heating surface.

FOSTER WHEELER CORPORATION
165 Broadway, New York, N. Y.

Branches in Principal Oil Centers

Foreign Associates:
Foster Wheeler Limited, London, England.
Foster Wheeler Limited, Toronto-Montreal-Vancouver, Canada.

FOSTER WHEELER

FRACTIONATING TOWERS HEAT EXCHANGERS
STEAM JET AIR PUMPS SUPERHEATERS
TUBE STILLS VACUUM PUMPS
WATER COOLED FURNACE SURFACES
BRASS AND COPPER TUBING AND PIPE

AERO UNIT COAL PULVERIZERS
AIR HEATERS CENTRIFUGAL PUMPS
CONDENSERS COOLING TOWERS
ECONOMIZERS EVAPORATORS
EXPANSION JOINTS FEED WATER HEATERS

"IWANA" Hair Belting

"Favorite of the Oil Fields" and UNRIVALLED for SERVICE

Will outwear and stand more hard use and abuse than any other make of BELTING.

Manufactured by
Fenwick-Reddaway Mfg. Co.
Newark, N. J.

CAMEL'S HAIR, COTTON and LINEN PRODUCTS
Mid-Continent Representative
ARCH F. CAMPBELL, P. O. Box 171, Tulsa, Okla.
Phone 2-1117

All Under One Cover
No Side Lines

You can get more good out of The Oil and Gas Journal than you can from all other oil papers combined.

It is edited, compiled and published with but one thought in mind—and that is to give you absolutely reliable, honest and accurate information every week—52 times a year.

The Oil and Gas Journal is the oldest oil publication in the world. Since the very beginning it has devoted all its energy and talents to but one thing—publishing The Oil and Gas Journal.

It has no side lines—it never will. The Oil and Gas Journal realizes that its readers are eager to get complete, accurate, quick information UNDER ONE COVER without being forced to purchase supplementary reference books at premium prices.

Therefore, it bends all its efforts toward giving you the benefits of its entire organization which extends in all directions from Tulsa, Okla., to the far corners of the world,—Russia, Persia, Rumania, Palembang, Chili, Venezuela, Italy, Yugoslavia, Borneo, Egypt, Ceram, Japan, Canada.

Read The Oil and Gas Journal every week and always renew your subscription promptly.

The OIL and GAS JOURNAL
PRODUCING REFINING ENGINEERING MARKETING
Tulsa, Oklahoma

REFRACTORIES

TO SATISFY EVERY NEED OF OIL AND GAS REFINERS

THERMOLITH
"The High Temperature Cement for Fire Clay Brick"

TRADE MARK

FIREBOND
"The Harbison-Walker Cement for Silica Brick"

Consulting Service Free

HARBISON-WALKER REFRACTORIES CO.
World's Largest Producers of Refractories
Pittsburgh, Pa. *U.S.A.*

STEEL PLATE CONSTRUCTION
Stills, Refinery equipment of every kind.
Steel Oil Storage Tanks, Condensers,
Fabricated and Erected
RITER-CONLEY COMPANY
General Offices—Pittsburgh, Pa.

Braxton County, the Union Oil & Gas Co. is due in the sand on the J. L. Richards farm. In Center district, Calhoun County, W. H. Bickel is rigging up on the A. V. Stalaker farm. In Union district, Tyler County, Hess & Co. have started to drill on the Homer Hess farm.

Southwest Pennsylvania

In the vicinity of the sensational producer of the Phillips Gas & Oil Co. on the John Harvey farm in Buffalo Township, Butler County, there is some test work under way and when completed will show if an extension can be found to the Harvey farm producer. Located 500 feet west of the Harvey well, the Phillips Gas & Oil Co. has started to drill on the Susan Penrose farm. Located 600 feet southwest of the Harvey well, the same company is drilling at 150 feet on the Clare McFarlan farm. J. F. Trees and others are drilling at 400 feet on the J. F. Trees farm, located 1,100 feet northeast of the Harvey well. These three wells when completed will be very good tests in the directions named from the Harvey well.

The well on the John Harvey farm was drilled in about a month ago and is still holding up at 18 bbls. a day.

In South Strabane Township, Washington County, Perry Tombaugh has completed at a total depth of 3,345 feet, a second test on the William D. Phillips farm. It is a small gasser in the Fifth sand. In Morris Township, Greene County, the B. and C. C. Nuss, trustee, second test on the Mrs. Ella Ray and others' farm is holding up at 50 bbls. a day since shot in the Big Injun sand.

In Richhill Township, Greene County, Frye & McCracken have a gasser in the Big Injun sand on the J. B. Allison farm. In Morris Township, the Manufacturers Light & Heat Co. has a gasser in the Gordon sand on the William Fonner farm.

In Green Township, Beaver County, the Georgetown Oil Co. and others have completed No. 3 on the J. P. Swearingen farm. It is showing so little oil it is doubtful if it will make a producer. In Darlington Township, J. L. Abrams has completed a test on the Keystone Nursery farm good for not more than 1 bbl. a day.

DEVELOPMENT OF OIL SHALE IN AMERICA

(Continued from Page 124)

vantages and limitations. The Pumperston retort is a continuously operating, externally heated retort, using fairly large quantities of steam, while the N-T-U is internally heated, intermittently operating, and does not make use of steam. The N-T-U retort has a charging capacity of about 25 tons, while the capacity of the Pumpherston retort is determined, to a large extent, by the quality of shale retorted. For a period of five consecutive days the throughput of the Pumpherston retort at the experimental plant exceeded 7.5 tons a day of 29-gallon shale, and on two days the throughput was more than 8 tons a day, but its average daily capacity is considered to be about 5 tons of fairly rich shale. The two retorts form a good combination for experimental study, in that the Pumpherston retort exemplifies slow distillation and the N-T-U retort rapid distillation.

Operating Results

The Pumpherston retort produces oils which are somewhat lighter and contain higher percentages of the more volatile fractions than those produced by the N-T-U retort, but, otherwise, the oils from the two retorts are similar. The oil produced by the Pumpherston retort has an average specific gravity of about .887 (28 degrees A.P.I.) and yields an average of about 15 per cent of gasoline and naphtha. The oil from the N-T-U retort has an average specific gravity of about .928 (21 degrees A.P.I.) and has a gasoline-naphtha content of about 8 per cent. The gasoline-naphtha fraction from both crudes is deficient in low boiling fractions, and it will be necessary to blend the product with more volatile material in order to produce a finished motor fuel. Experiments have shown that as much as 60 per cent of motor fuel can be made from shale oil by cracking. Analyses of typical samples of oil from the two retorts are given in Table 1.

During the operating period which ended on June 30, 1927, a total of 2,129 tons of oil shale was run through the retorts, yielding 37,909 gallons (903 bbls.) of oil, an average yield of 17.8 gallons a ton. The shale charged to the retorts had an oil content ranging from 11 to 43 gallons a ton, the highest average yield for a single day's operation amounting to 42.5 gallons a ton. The oil shale used in the plant was mined in a quarry at the outcrop of the shale on the escarpment at an elevation of about 2,400 feet above the plant site. A thickness of approximately 60 feet of the shale escarpment was mined, which included the rich "mahogany ledge."

As a result of nine months' operation of the experimental oil shale plant, valuable information was obtained on the problems of producing oil from American shales. Data were secured on drilling and shooting oil shale, on retorting methods to be followed in order to obtain the highest yield of the best quality of oil and on refinery methods offering promise of good results in the manufacture of refined products. It was found, for example, that both retorts operated satisfactorily on the noncoking shales, but both gave trouble when handling shales of the coking variety. Several "hang-ups" occurred in the Pumpherston retort, but these may have been due partly to the leakage of air and combustion products through a crack in the inner wall of the retort. This crack was discovered when the retort was shut down and has since been repaired. Gas circulation practically ceased when coking shales were charged to the N-T-U retort, but this difficulty can be overcome by the use of an exhauster of larger capacity; this is now being installed. The Pumpherston retort gave a high recovery of a good grade of shale oil, and when operating on the richer shales was practically self-supporting as regards fuel for heating the retort, the gas produced during retorting being used for that purpose. The average recovery of oil from the N-T-U retort was not quite so high as from the Pumpherston, nor was the oil of such high quality; the capacity of the N-T-U retort is, however, much higher, and it has the advantage of not requiring any additional fuel. Sufficient data is not available to determine which type of retort is best adapted to American shales, but on the basis of experience gained during the time the plant was operated it was decided to slightly modify both retorts before resuming operations.[2]

Program

During the coming year it is hoped to secure additional information on such retorting problems as the effect of rate of heating, variations in amount of steam used, size of shale retorted, heat transfer, recirculation of retort gases and the determination of the maximum percentage of coking shale that can be satisfactorily retorted. Special studies will be made of conditions favorable to the production of ammonia and to the formation of sufficient gas to make the Pumpherston retort self-supporting.

The work on refining problems will be continued, but for the present particular attention will be paid to the production of motor fuel by cracking and to the development of methods for treating it. Future work will inelude studies of the manufacture of lubricating oils and other products from shale oil.

[2] A comprehensive report, giving the results of nine months' operation of the experimental plant, is being prepared, and will be published as a Bureau of Mines bulletin. An article by Martin J. Gavin, entitled "The Bureau of Mines Experimental Oil Shale Plant," will be published in the August, 1928, issue of the Journal of Industrial and Engineering Chemistry. This article gives a description of the plant and discusses some of the results obtained.

In and Out

In the earth (any soil) or exposed to weather and salt air, NO-OX-ID is being relied upon more and more as the years check off longer and longer excellent service records.

NO-OX-ID
IRON-RUST
TRADE MARK
The Original Rust Preventive

NO-OX-ID provides both chemical and mechanical protection for any exposed metal surface. The chemical protection gives the metal the quality of resistance to rust under the mechanical covering and where trouble can not start, there is no trouble.

Let us demonstrate NO-OX-ID to you or send you data on its performance for well known companies over a period of years. *Write.*

DEARBORN CHEMICAL COMPANY
NO-OX-ID-IZED WRAPPER
REG U.S. PAT OFF.
NEW YORK CHICAGO

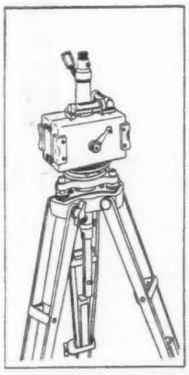
Dearborn Chemical Company

"A House of Chemical Engineers" In Its Forty-First Year of Service to Industry

310 South Michigan Ave., Chicago
299 Broadway, New York

Canadian Offices and Factory: 2454-2464 Dundas St., West, Toronto

ASKANIA



Accuracy and low cost in prospecting

Askania geophysical instruments now belong to the Standard equipment of geological departments with many American operating companies in the United States and abroad. They speed up exploration work, remove doubt and help to eliminate unprofitable borings.

Ask for further details on our torsion balances, magnetometers, seismographs and other geophysical equipment.

Askania Werke A. G.

American Office: 1024 Marine Bank Bldg.,
HOUSTON, TEXAS

The sectional steel rocker hinge pin, rocks on its two oval faces. Easily removable when tension is released. Outlasts any other type of pin.
"JUST A HAMMER TO APPLY IT"

Reg. U.S. Pat Off. and throughout the world.

Strength = Service

ONE joint of Alligator Steel Belt Lacing lasts many belts their full life. The belt ends are clinched in a powerful uniform grip of steel. This great surplus of strength is seldom called upon, but with it, the lacing carries on in long efficient service. Alligator Steel Belt Lacing saves belting and operating costs. Made in 11 sizes for all belts from 1-16 to 5-8 inch thickness. Recommended and used extensively on powers and in refining plant service.

Easily purchased throughout the world.

FLEXIBLE STEEL LACING CO.
4665 Lexington St., Chicago, U. S. A.
In England at 135 Finsbury Pavement, London, E. C. 2

ALLIGATOR
TRADE MARK REG. U.S. PAT. OFFICE
STEEL BELT LACING

RYERSON

IMMEDIATE SHIPMENT FROM STOCK

Bars, Plates, Rivets, Tool Steel, Shapes, Sheets, Bolts, Welding Rods, Structurals, Tubes, Wire, Concrete, Reinforcing, Rails, Pipe, Turnbuckles, Alloy Steel, Ascoloy, Small Tools, Machine Tools, etc.

Write for the Ryerson Journal and Stock List.

JOSEPH T. RYERSON & SON INC.

Chicago Detroit Milwaukee Buffalo St. Louis New York Cincinnati Cleveland Boston

Tulsa Office: 410 Atlas Life Bldg.

STEEL

Houston Office: D. S. Muir 220 Main Street

The arrow points to one of the gills of the Byrne Revolving Ventilators. These slits keep it on an even keel while revolving and provide just the right amount of suction.

BYRNE

Revolving Ventilator built light, strong and compact as an airplane.

The Byrne Stationary Ventilator. Note the size of the weather guard and its sturdy construction.

Over 15,000 Byrne Ventilators are in use, both revolving and stationary—the reason they do the work better.

Manufactured by

TULSA SHEET METAL CO.
13-15 South Lansing
TULSA, OKLAHOMA

Ross-Meehan Foundries

Manufacturers

"Electric Steel Castings—Electrically Annealed," "Certified Malleable Iron Castings," "Meehanite Metal Castings," Gray Iron Castings, and Special Analysis Castings.

For

Oil Producers and Refiners

River Clamps a Specialty

Chattanooga, Tenn., U. S. A.

Carbondale Refrigeration for Refiners

CARMACO

Send for a Copy of our Wax Plant Bulletin

Design of Complete Wax Plants—Absorption and Compression Refrigerating Machines—Wax Distillate Chilling Machines—High Pressure Filter Presses—Paraffine Wax Sweaters—Heat Exchangers and other Refinery Equipment.

CARBONDALE MACHINE COMPANY—Carbondale, Pa.

District Offices

New York, Cleveland, Dallas, New Orleans, Philadelphia, Kansas City, Pittsburgh, Chicago, Los Angeles, Houston, Buffalo, Tulsa

Recent Patents

1,677,775. Art of Cracking Hydrocarbon Oils. Eugene C. Harthel and Thomas De Colon Tifft, Chicago, Ill., assignors to Sinclair Refining Co., New York, N. Y., a corporation of Maine. Filed August 12, 1927. Serial No. 212,482. 10 Claims. (Cl. 196—49.)

1. An improved method of cracking hydrocarbon oils, which comprises maintaining a body of oil in a vaporizing zone under a superatmospheric pressure and heating it to a cracking temperature by circulating oil therefrom through heating tubes and back thereto, taking off vapors including vapors of the cracked product therefrom under pressure, discharging oil from the said body into a separate vaporizing zone maintained under a pressure lower than that prevailing in the first and taking off vapors from the second vaporizing zone, subjecting the vapors from the second vaporizing zone to a condensing operation and forcing condensate from this condensing operation through separate heating tubes into the first vaporizing zone, and passing heating gases from a firebox in which fuel is burned for supplying heat to the cracking operation first over the heating tubes through which condensate from the said condensing operation is forced and then over the heating tubes through which oil from the said body is circulated.

1,677,772. Art of Cracking Hydrocarbons. Eugene C. Herthel and Thomas De Colon Tifft, Chicago, Ill., assignors to Sinclair Refining Co., New York, N. Y., a corporation of Maine. Filed June 22, 1926. Serial No. 117,696. 1 Claim. (Cl. 196—49.)

An improved method of producing lower boiling hydrocarbon oils from higher boiling hydrocarbon oils, which comprises forcing such higher boiling hydrocarbon oils in a single pass through a heating zone into a primary vaporizing zone and maintaining the oil under superatmospheric pressure in both the said heating zone and the primary vaporizing zone, passing unvaporized oil from the primary vaporizing zone to an externally unheated secondary vaporizing zone and maintaining the oil therein under a pressure lower

LEGAL

UNITED STATES
DEPARTMENT OF THE INTERIOR
Office of the Secretary
Washington

Call for Bids to Purchase Government Royalty Oil from Salt Creek field, Wyoming.

The Secretary of the Interior invites sealed bids to be submitted at his office, Interior Department Building, Washington, D. C., on or before noon of December 10, 1928, for the royalty oil accruing to the United States from leases on Government land within the Salt Creek oil field in the State of Wyoming, for a period of three (3) years beginning January 1, 1929. For the calendar year 1927 the total Government royalty oil from the Salt Creek field amounted to approximately 1,920,000 barrels, and for the period from January 1 to August 31, 1928, to approximately 1,280,000 barrels, the average gravity in both years being in the range from 36.0 to 36.9 degrees A.P.I.

Bids must be based upon the highest posted field price for oil of like gravity in Oklahoma and Kansas, and or in Wyoming, whichever is the higher, and must be stated as a differential in cents per barrel from such posted price. Delivery of royalty oil will be made on each leasehold for the account of the successful bidder. Payments for the royalty oil are to be made to the Register of the United States Land Office at Cheyenne, Wyoming, on or before the fifteenth (15th) day of each month following that in which delivery is made and shall be computed on the basis of tank measurement with two (2) per cent strapping in terms of standard barrels at sixty (60) degrees Fahrenheit.

The successful bidder will be required to furnish a corporate surety bond in the sum of $250,000 conditioned upon full and complete compliance with the terms of the contract.

The Secretary of the Interior may accept any bid which in his judgment is most advantageous to the Government, and reserves the right to reject any or all bids.

Sealed bids are to be submitted to the Secretary, Department of the Interior, Washington, D. C., the envelope to be marked plainly, "Bid on Salt Creek royalty oil." No bids received after the time herein fixed for submitting bids will be considered.

Additional information can be obtained from the Geological Survey, Department of the Interior, Washington, D. C., or from the field offices of the Geological Survey at Casper, Wyoming.

ROY O. WEST,
Secretary of the Interior.

October 30, 1928.

Absolute Merit

and exact conformity to truth in publishing the facts of every branch of the Oil Business has elevated The Oil and Gas Journal to the position of esteem and respect in which it is held by real Oil Men everywhere.

"The Oil Man's Bible"

The OIL and GAS JOURNAL
Tulsa, Okla.

One Piece Drop Forged Jaws giving full support for small size pipe.

Drop Forged Steel Handle. Alloy Steel Screw. Proof-tested Chain.

ARMSTRONG BROS.

CHAIN PIPE VISE

This famous Vise combines maximum capacity with minimum weight. Can be easily carried in tool bag and attaches anywhere.

Write for Catalog P-10.

ARMSTRONG BROS. TOOL CO.
330 N. Francisco Ave., Chicago, U. S. A.

Goodman Cylindrical Stopper for GAS, OIL, WATER, DRAIN PIPES

Safety Gas Main Stopper Co.
523 Atlantic Ave.,
Brooklyn, N. Y.

PATRICK CARBON
for Diamond Core Drilling

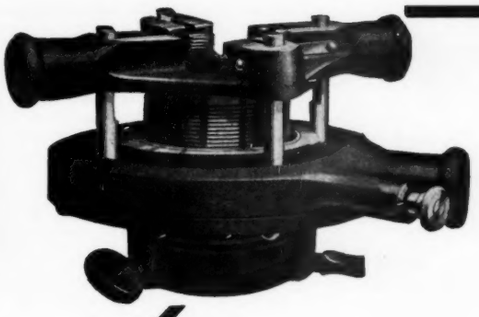
"Specify Patrick Carbon"

THERE is extra service in PATRICK CARBON that every diamond core drill operator is invited to enjoy. It is included without additional cost with every order for Patrick Expertly Graded Carbon.

SEND FOR BOOKLET

You can get in touch with our representative by wiring Duluth office

R. S. PATRICK
Duluth, Minnesota, U.S.A.
Cable Address, "Exploring" Duluth



"TOLEDOS"—
Always Dependable

TRADE-MARK

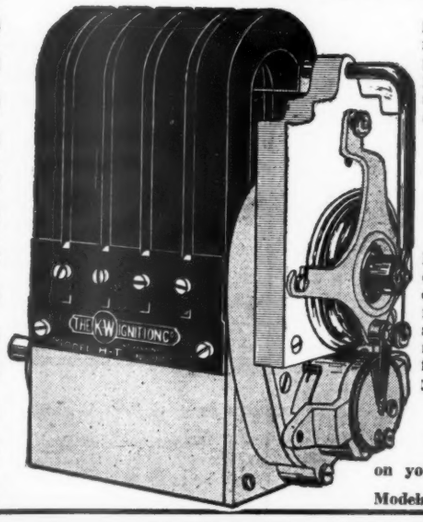
"TOLEDOS" never fail to perform their work of cutting and threading all sizes of pipe up to 12" easily, quickly and efficiently.

Oil field operators know from experience that when results are demanded, genuine "TOLEDO" trademarked tools will be specified. Our complete catalog will be gladly sent you on request.

THE TOLEDO PIPE THREADING MACHINE CO.
TOLEDO, OHIO
New York Office
72 Lafayette St.

THE VALUE OF ANY TRADE MARK DEPENDS UPON THE CONFIDENCE IT HAS INSPIRED

The K-W High Tension MAGNETO



has borne a trade-mark which over a period of twenty years has represented to the user a guarantee of

SAFE AND DEPENDABLE IGNITION

Built for heavy duty work — For continuous twenty-four hour service, and has predominated in the oil fields all these years.

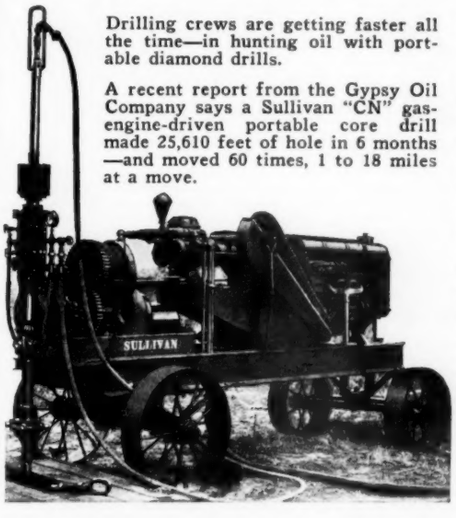
SPECIFY K-W on your next engine.

Models for every type

MANUFACTURED BY THE K-W IGNITION CORP. CLEVELAND OHIO U.S.A.

OKLAHOMA TEXAS REPRESENTATIVES MAGNETO IGNITION CORP. 324 E. SECOND STREET TULSA, OKLAHOMA

Diamond Drill Bores 25,610 Ft., Moves 60 Times—In 6 Months



Drilling crews are getting faster all the time—in hunting oil with portable diamond drills.

A recent report from the Gypsy Oil Company says a Sullivan "CN" gas-engine-driven portable core drill made 25,610 feet of hole in 6 months—and moved 60 times, 1 to 18 miles at a move.

In a single month the drill bored 5,702 feet in 14 locations—the month before, 5,404 feet—and the 6-months' average was 4,400 feet a month.

One or two whole townships can now be tested for the cost of a single wildcat well — which shows nothing if it doesn't strike oil. Cores obtained by Sullivan Diamond Drills are actual samples of all the strata penetrated. They show the exact depth of the key bed and enable the geologists to trace the anticline.

Have you sent for the free 80-page handbook, "Diamond Drilling for Oil?"

Use the coupon.

SULLIVAN DIAMOND DRILLS

Send me free 80-page handbook "Diamond Drilling for Oil."

Name .....
Address .....
Occupation .....

SULLIVAN
Sullivan Machinery Company
88 E. Adams St., CHICAGO

BRANCH OFFICES:
NEW YORK, N. Y.
R.525,165 BROADWAY
LOS ANGELES, CALIF.
420 E. THIRD ST.
CHICAGO, ILL.
1615 FIRST NATL. BANK BLDG.
TULSA, OKLA.

THE AMERICAN WELL WORKS
General Offices AURORA, ILLINOIS and Factory

Nine Years' continuous Royalty Dealings in Mid-Continent fields.

F. O. HARRELL
ROYALTIES
302 City National Bank Building, Wichita Falls, Texas
Specializing in undeveloped royalties in favorable districts, passed upon by my own geological and geophysical staff.
INQUIRIES INVITED FROM ROYALTY BUYERS.

Cross Cracking Plants
THE M. W. KELLOGG CO.
7 Dey Street - New York
Houston, Texas . . . 1514 Petroleum Bldg.
San Francisco, Cal. . . . . 444 Market St.
Los Angeles, Cal. . 329 Petroleum Sec. Bldg.

Protect your Oil and Natural Gas Lines with
BITUMASTIC
REG. U.S. PAT. OFF
ENAMEL
Write for our new book "The Protection of Pipe Lines"
Wailes Dove-Hermiston Corporation
17 Battery Place, New York
Philtower Bldg., Tulsa, Okla.
Philadelphia Cleveland Chicago Houston San Francisco

NATIONAL PETROLEUM ENGINEERING COMPANY
Engineers & Geologists
TULSA, OKLAHOMA
APPRAISALS
REPORTS-COMMERCIAL & TAX
SURVEYS
ESTIMATES OF OIL RESERVES
AN EXPERIENCED OIL FIELD ORGANIZATION

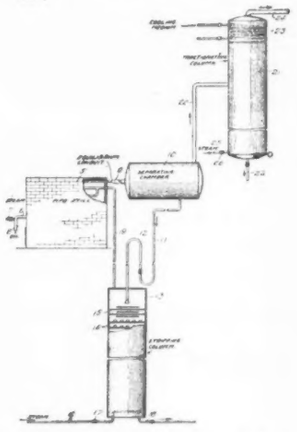
NUGENT OIL FILTERS
Oiling Systems
Oiling Devices
408 N. HERMITAGE AVE
CHICAGO U.S.A. ESTD. 1897

than that prevailing in the primary vaporizing zone, taking off and condensing vapors from the secondary vaporizing zone and forcing oil condensed from these vapors again through the heating zone, first in advance of fresh oil and then in admixture with fresh oil, without returning to the heating zone unvaporized components of oil which have once passed therethrough, passing heating gases in the heating zone first in heat exchange with the oil condensed from vapors from the secondary vaporizing zone and then in heat exchange with the mixture of this oil with fresh oil, and taking off vapors from the primary vaporizing zone including vapors of the desired lower boiling hydrocarbon oils.

1,678,728. Treating Hydrocarbon Oils. William S. Hadaway, Jr., New Rochelle, N. Y., assignor, by mesne assignments, to The Texas Company, New York, N. Y., a corporation of Delaware. Filed September 15, 1923. Serial No. 662,821. 3 Claims. (Cl. 196—48.)

1. Apparatus for converting higher boiling hydrocarbons into lower boiling ones comprising a vertical cracking chamber, a multitubular exchanger disposed longitudinally within the cracking chamber and formed with outlets at the upper end thereof, means for introducing oil into the bottom of the exchanger, mechanical means for agitating the contents of the cracking chamber and means for drawing off liquid from the bottom of the cracking chamber.

1,676,611. Art of Continuous Distillation of Hydrocarbon Oils. Roger D. Hunneman, Chicago, Ill., assignor to Standard Oil Co., Whiting, Ind., a corporation of Indiana. Filed March 27, 1925. Serial No. 18,818. 5 Claims. (Cl. 196—85.)



1. The method of distilling hydrocarbon oils which comprises passing the oil in a confined steam through a heating zone, discharging the oil into a separating chamber, supplying steam in said chamber at substantially the same temperature as the oil and in thermal equilibrium therewith, separately removing unvaporized oil and vapors from said chamber, subjecting the removed unvaporized oil to the action of live steam, thereby removing lighter fractions therefrom, withdrawing from the system the thus treated unvaporized oil, commingling the removed lighter fractions with the vapor contents of the separating chamber, subjecting the vapors removed from the separating chamber to a refluxing action and separately collecting the reflux formed.

5. In distillation apparatus, a heated conduit, a separator into which said conduit discharges, said separator effecting separation of vapors and unvaporized oils, a scrubbing tower, means for supplying unvaporized oil from said separator to the scrubbing tower, means for introducing steam into the lower portion of said scrubbing tower, means for leading vapors from said scrubbing tower into the heating conduit, a vapor conduit leading from the separator, a fractionating tower into which the vapor conduit opens at an intermediate point, and means for separately withdrawing reflux from said tower.

Thousands of cars—various capacities—all modern and conditioned. Rental periods of one trip to ten years. *Write for details.*
NORTH AMERICAN CAR CORPORATION
Executive Offices:
Chicago, Ill.

"Oil Field Problems and Their Solution"
A Service for the Man upon Whom Successful Operation Depends
In every issue of
The OIL and GAS JOURNAL
Tulsa, Okla.

LELAND E. FISKE
Certified Public Accountant (Indiana)
Valuation Engineer
216 Atlas Life Bldg., Tulsa, Okla.
Specialist in Oil Property Taxation, Appraisal and Accounting

ARTHUR C. BROWN
SOLICITOR OF UNITED STATES AND FOREIGN PATENTS
406-412 KENNEDY BLDG.
Tulsa, Okla.
Mr. Fred Krueger
in Charge
Phone 4-2319

Chester W. Washburne
Geologist and Engineer
27 William St., N. Y.

TEXAS OIL MAPS
County and District Catalog on Application
HEYDRICK MAPPING COMPANY
Wichita Falls, Texas

Can Never Know It All

In the oil industry, especially, the man who thinks he knows it all is riding for a fall. The best posted oil men are quickest to admit that it is never safe to attempt prophecy in the oil business. Keeping close tab on developments from week to week is the best they can do and they find The Oil and Gas Journal the readiest and most reliable means of keeping in touch with every department. They frankly say they cannot afford to miss a single issue because that might be the number which was of immediate value to them. There are calls for back numbers every day or so from those who have heard that such and such an article appeared in The Oil and Gas Journal that they wanted to read. Most often these back numbers are unavailable.

Just now, with the industry at the turning point of the year, it is especially essential that active oil men should keep their finger on the pulse of the oil business and they can read its condition most easily and accurately in The Oil and Gas Journal. No one can foresee day-to-day developments in the oil industry but if you know the conditions you can not be taken by surprise so often.

It is the business of The Oil and Gas Journal to report conditions and so far as possible to offer intelligent anticipation of what may be expected. Its success is attested by the continually increasing number of readers who find they cannot keep house without it.

Keep in Touch by Using This Coupon

ORDER BLANK
The Oil and Gas Journal, Tulsa, Okla.

You are hereby directed to mail The Oil and Gas Journal to me for ..... year. Enclosed find remittance $.....

Classify my interests as checked by me.

..... Producing ..... Refining

..... Equipment ..... Marketing

..... Transportation

Name .....

Address .....

City .....

U. S. OR MEXICO	
One Year	$6.00
Six Months	3.00
Three Months	2.00
FOREIGN	7.00

Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS
Pipe Line Statement for August, 1928

Runs

Company—	Month (bbls.)	Dy. av. (bbls.)
Prairie P. L. Co.*	4,402,000	142,000
Gulf P. L. Co.	1,584,975	51,128
Texas P. L. Co.	742,717	23,959
Magnolia P. L. Co.	2,039,257	65,782
Empire P. L. Co.	965,660	31,150
Cosden P. L. Co.	1,040,217	33,555
Sinclair P. L. Co.	3,850,665	124,215
Oklahoma P. L. Co.	3,413,315	110,107
Other lines*	5,301,000	171,000
Total August	23,339,806	752,887
Total July	22,004,040	709,808
Difference	1,335,766	43,079

Shipments

Company—	Month (Bbls.)	Dy. av. (Bbls.)
Prairie P. L. Co.†	6,021,445	194,240
Gulf P. L. Co.	1,445,867	46,641
Texas P. L. Co.	1,059,583	34,180
Magnolia Pet. Co.	1,988,410	64,142
Empire P. L. Co.	1,129,915	36,449
Cosden P. L. Co.	887,163	28,618
Sinclair P. L. Co.†	3,138,204	101,232
Oklahoma P .L. Co.	3,342,764	107,831
Other lines	5,859,000	189,000
Total August	24,872,351	802,333
Total July	24,599,922	793,926
Difference	272,429	8,407

Stocks

Prairie O. & G. Co.*	31,355,000
Prairie P. L. Co.*	2,250,000
Gulf P. L. and Gypsy Oil Co.	10,169,509
The Texas Company	6,863,615
Magnolia Pet. Co.	8,778,770
Empire P. L. Co.	3,654,319
Mid-Continent Pet. Corp.	3,414,041
Sinclair Crude Oil Pur. Co.	19,800,000
Carter Oil Co.	12,320,994
Oklahoma P. L. Co.	2,887,081
Other lines*	11,275,000
Total August	112,768,329
Total July	113,149,369
Difference	381,040

*Estimated. †Prairie Pipe Line shipments include Texas crude oil, and Sinclair shipments include Texas and Wyoming crude oil.

Note—Stocks do not include approximately 8,000,000 bbls. of crude oil held in storage on private tank farms and leases and approximately 450,000 bbls. of Texas Panhandle crude oil in storage in Oklahoma.

EASTERN PIPE LINE REPORT

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for August and September:

	Aug., '28	Sept., '28
National Transit	170,904.52	157,168.79
S. W. Pa. P. L.	91,112.38	81,070.62
Eureka P. L.	381,023.25	345,505.60
Buckeye P. L. (Macksburg)	367,692.66	321,117.10
Buckeye P. L. (Cleve)	11,928.55	11,281.62
Buckeye P. L. (Lima, etc.)	120,600.29	108,830.90
Indiana P. L.	7,013.10	6,387.52
Cumberland P. L.	223,338.19	193,343.46
N. Y. Transit	25,007.11	23,100.70
Tidewater P. L.	220,230.22	204,507.93
Pure Oil	65,261.50	59,111.90
Emery P. L.	61,506.60	57,782.02
Paragon Dev.	34,022.80	26,168.86
Stoll Oil. Ref.	10,447.17	9,243.26
Total	1,790,088.34	1,604,620.28
Daily average	57,744.78	53,487.34

Note—Indian Refining Co. also reported other receipts of 357,570.08 bbls. Paragon Refining Co. had other receipts of 183,883,-44 bbls. Paragon Development had other receipts of 719.21 bbls.

Petroleum Deliveries

The following tables exhibit the shipments of regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky at the close of August and September:

	Aug., '28	Sept., '28
National Transit	572,070.14	532,771.70
S. W. P. P. L.	462,872.37	481,986.45
Eureka P. L.	224,817.97	213,103.59
Buckeye P. L. (Macksburg)	148,487.46	142,859.81
Buckeye P. L. (Cleve)	2,673.05	1,697.10
Buckeye P. L. (Lima, etc.)	1,512,473.28	1,399,448.58
Indiana P. L.	1,426,376.89	1,379,998.87
Cumberland P. L.	181,480.36	297,672.12
N. Y. Transit	213,009.28	240,697.91
Northern P. L.	316,097.83	301,912.35
Tidewater P. L.	177,158.38	124,606.05
Pure Oil	62,891.44	62,090.54
Emery P. L.	56,960.09	61,266.58
Paragon Ref.	189,693.84	190,716.50
Indian Ref.	393,569.13	366,303.23
Paragon Dev.	37,817.61	27,004.95
Total	5,978,449.12	5,824,136.38
Daily average	192,853.19	194,137.88

Gross Stocks

The gross stocks held by various pipe lines in the oil-producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky and Indiana for August and September:

	Aug., '28	Sept., '28
National Transit	1,135,875.48	1,034,508.62
S. W. Pa. P. L.	713,493.58	607,019.77
Eureka P. L.	1,102,757.62	1,144,172.16
Buckeye P. L. (Macksburg)	540,894.00	507,516.69
Buckeye P. L. (Cleve)	46,048.37	42,976.72
Buckeye P. L. (Lima, etc.)	2,717,960.51	3,600,695.49
Indiana P. L.	598,136.05	602,500.63
Cumberland P. L.	632,613.31	511,311.43
Southern P. L.	410,757.10	414,022.54
N. Y. Transit	706,799.19	612,289.36
Northern P. L.	458,296.62	424,456.32
Pure Oil	63,850.93	64,141.86
Emery P. L.	8,656.13	9,373.75
Paragon Ref.	23,167.67	16,042.95
Indian Ref.	69,332.18	61,936.95
Paragon Dev.	7,544.29	7,944.96
Total	10,236,743.03	9,660,910.34
Decrease	582,587.91	575,832.69

Grades of Oil

The following table shows the amount of the different grades of oil held by the Eastern Pipe Lines at the close of August and September showing the gross stocks of the above fields:

	Aug., '28	Sept., '28
Pennsylvania	3,368,647.01	3,227,574.95
Lima	965,466.57	969,623.64
Kentucky	993,362.71	831,752.66
Mid-Continent	4,857,572.08	4,560,201.79
Illinois	51,694.66	71,752.30
Total	10,236,743.03	9,660,910.34

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1925	1926	1927	1928
Jan.	56,831	55,630	56,209	52,904
Feb.	60,606	60,394	61,298	57,002
Mar.	60,575	61,644	63,247	57,455
April	63,062	63,019	60,337	56,812
May	59,217	60,580	60,284	62,067
June	61,270	61,131	62,757	58,220
July	62,639	63,206	58,674	57,144
Aug.	69,686	61,815	60,870	57,745
Sept.	62,510	64,639	60,285	53,487
Oct.	145,388	161,132	147,036	.....
Nov.	59,350	61,774	57,275	.....
Dec.	57,974	58,755	53,089	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1925	1926	1927	1928
Jan.	157,889	156,056	141,227	146,465
Feb.	160,863	159,488	138,534	167,368
Mar.	154,591	150,239	133,777	169,883
April	151,429	152,371	140,227	172,935
May	146,995	160,998	144,594	180,559
June	149,467	160,257	149,772	188,034
July	161,338	160,045	151,850	189,470
Aug.	161,730	151,929	188,653	192,853
Sept.	156,719	158,915	144,213	194,138
Oct.	145,388	161,132	147,036	.....
Nov.	143,582	152,608	150,975	.....
Dec.	150,162	136,428	144,504	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1926	1927	1928
Jan.	9,859,170	9,718,008	12,276,710
Feb.	9,579,354	10,119,162	12,180,419
Mar.	9,438,292	10,794,044	12,239,725
April	9,805,851	11,112,295	11,740,125
May	9,531,757	11,359,381	11,602,461
June	9,585,904	11,493,673	11,287,678
July	9,734,687	11,458,128	10,819,331
Aug.	9,058,947	11,989,115	10,236,743
Sept.	9,436,732	12,212,716	9,660,910
Oct.	9,269,806	12,047,661	.....
Nov.	9,257,067	11,939,740	.....
Dec.	9,454,512	12,340,297	.....

Franklin Pipe Line Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and not counted in the stocks and averages reported above:

1927	Runs	Shipments	Stocks
Sept.	3,309.56	2,656.48	19,372.25
Oct.	2,801.32	1,226.99	20,946.58
Nov.	2,746.50	2,220.53	21,472.55
Dec.	2,779.86	1,893.69	22,358.72
1928—			
Jan.	1,886.06	2,424.79	21,819.99
Feb.	2,460.14	3,109.34	21,170.79
March	2,578.86	3,540.33	20,209.32
June	3,153.08	2,779.02	17,922.58
July	2,902.50	3,628.02	17,197.06
Aug.	2,874.11	2,350.13	17,721.04
Sept.	2,820.31	6,255.42	16,285.93

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, Oct. 1	2,085,377.67
Runs from wells	545,420.55
Other receipts	405,258.98
Regular deliveries	654,033.74
Other deliveries	383,379.14

The amount of Illinois oil run by the Tidewater Pipe Co. in September was 24,-887.36 bbls. Deliveries were 83,259.76 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

1927—	Runs	Deliveries
September	619,580.49	433,212.49
October	601,099.25	408,287.58
November	605,621.14	415,185.06
December	577,321.25	397,176.07
1928—		
January	561,759.57	434,147.02
February	573,619.78	450,217.81
March	725,250.82	520,595.69
April	526,013.13	448,282.44
May	632,968.64	522,980.51
June	608,552.49	625,087.33
July	612,286.49	565,678.37
August	639,074.85	671,864.03
September	570,307.91	737,293.50

Tidewater Pipe Co., Ltd., also delivered in September, 261,905.21 bbls. Oklahoma oil.

AVERAGE DAILY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF COAST PORTS

Average bbls. per day—	ATLANTIC PORTS: Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS: Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total all ports
April	9,033	9,167	24,133	18,167	7,867	66,367	.....	.....	.....	.....	.....	66,367
May	19,355	5,387	19,581	16,419	4,774	65,516	.....	.....	.....	.....	.....	65,516
June	11,800	.....	23,367	19,700	9,000	63,867	.....	.....	.....	.....	.....	63,867
July	19,807	2,903	8,774	20,419	2,452	54,355	.....	.....	.....	.....	.....	54,355
August	18,161	3,613	27,774	17,677	2,419	69,645	.....	.....	.....	.....	806	70,451
September	11,100	.....	18,967	38,200	6,700	74,967	.....	.....	.....	.....	.....	74,967

AVERAGE DAILY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Average bbls. per day—	ATLANTIC PORTS: Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS: Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total all ports
April	18,267	5,800	124,133	33,200	36,067	217,467	9,333	23,467	2,167	133	35,100	252,567
May	28,000	7,033	107,484	32,129	21,936	196,581	3,871	24,032	.....	1,904	29,807	226,388
June	24,900	12,233	119,867	41,667	19,300	217,967	1,833	15,567	2,167	.....	19,567	237,534
July	23,484	14,548	111,903	37,678	21,452	209,065	9,355	25,000	.....	774	35,129	244,194
August	25,290	16,323	123,226	21,613	7,194	193,645	.....	38,677	.....	613	39,290	232,935
September	22,933	19,100	110,467	30,700	14,333	197,533	6,367	41,300	6,333	1,667	55,667	253,200

GROSS PRODUCTION IN UNITED STATES FOR 12 MONTHS

(In barrels of 42 gallons)

		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mountains	Eastern Fields	Total
October:	Month	19,448,893	24,247,053	19,200,098	3,509,169	3,117,298	2,058,889	3,258,895	3,400,000	77,240,295
	Daily average	627,384	782,163	619,358	113,199	100,555	66,416	72,867	109,677	2,491,622
November:	Month	18,516,467	23,083,380	18,628,290	3,313,650	2,906,760	1,956,960	2,234,730	3,302,500	73,942,737
	Daily average	617,216	769,446	620,943	110,455	96,892	65,232	74,491	110,083	2,464,758
December:	Month	18,938,823	22,208,417	19,840,009	3,427,174	2,962,750	1,927,148	2,400,578	3,219,900	74,924,798
	Daily average	610,930	716,400	640,000	110,554	95,576	62,166	77,438	103,868	2,416,928
January:	Month	19,028,228	20,978,320	20,024,981	3,319,325	2,791,922	1,805,015	2,429,375	3,133,000	73,510,166
	Daily average	613,814	676,720	645,967	107,075	90,061	58,226	78,367	101,064	2,371,296
February:	Month	18,038,459	19,294,426	19,645,488	3,079,887	2,571,575	1,759,606	2,230,887	3,166,000	69,786,328
	Daily average	622,016	665,324	677,431	106,203	88,675	60,676	76,927	109,173	2,406,425
March:	Month	19,118,320	20,162,524	21,466,632	3,379,031	2,687,948	1,871,158	2,401,911	3,522,000	74,609,524
	Daily average	616,720	650,404	692,472	109,001	86,708	60,360	77,481	113,613	2,406,759
April:	Month	18,280,729	19,096,320	21,845,428	3,412,260	2,472,600	1,915,020	2,370,810	3,231,000	72,624,767
	Daily average	609,357	636,564	728,180	113,742	82,420	63,835	79,027	107,700	2,420,826
May:	Month	19,331,866	19,443,355	21,191,561	3,367,809	2,843,847	1,926,036	2,525,043	3,619,000	74,248,517
	Daily average	623,609	627,205	683,599	108,639	91,737	62,130	81,453	116,742	2,395,113
June:	Month	19,164,244	18,482,981	19,802,520	3,202,050	3,075,911	2,112,149	2,425,470	3,394,000	71,659,325
	Daily average	638,808	616,099	660,084	106,735	102,530	70,405	80,849	113,133	2,388,644
July:	Month	19,754,458	18,809,498	22,155,335	3,171,548	2,792,139	2,237,738	2,492,586	3,472,000	74,885,302
	Daily average	637,241	606,758	714,688	102,308	90,069	72,185	80,406	112,000	2,415,655
August:	Month	19,444,849	20,840,494	22,201,257	3,147,058	2,711,787	2,221,677	2,561,840	3,571,200	76,700,211
	Daily average	627,255	672,274	716,170	101,518	87,477	71,667	82,640	115,200	2,474,206
September:	Month	18,908,169	22,456,860	21,554,260	3,047,250	2,540,070	1,829,625	2,432,430	3,420,000	76,188,664
	Daily average	630,272	748,562	718,475	101,575	84,669	60,987	81,081	114,000	2,539,621
	Total 12 months	227,973,555	249,104,228	247,555,859	39,376,211	33,474,607	23,621,023	28,764,545	40,450,600	890,320,628
	Daily average	622,878	680,613	676,382	107,585	91,461	64,538	78,592	110,521	2,432,570

The ADVERTISERS' INDEX

A

Acme Fishing Tool Co. .....
Aetna Ball Bearing Mfg. Co. .....
Ajax Iron Works 74-75
Ajax Rope Co. 188
Allegheny Steel Co. ....Inside Front Cover
Allis-Chalmers Mfg. Co. 60
Alloys Company, The .....
Aluminum Co. of America .....
American Cable Co., Inc. .....
American Car & Foundry Co. .....
American Hammered Piston Ring Co. ..
American Iron & Machine Works, Inc. ..
American-La France & Foamite Corp. ..
American Radiator Co. .....
American Roller Bearing Co. 20
American Rolling Mill Co. .....
American Schaeffer & Budenberg Division, Consolidated Ashcroft Co., Inc. ..
American Sheet & Tin Plate Co. .....
American Steam Pump Co. 187
American Telephone & Telegraph Co. ..
American Well Works 190
Andrews Steel Co. 187
Arco Company, The 175
Armstrong Bros. Tool Co. 188
Ash Grove Lime & Portland Cement Co. 14
Askania Werke, A. G. .....
Athey Truss Wheel Co. 9
Atmore, Robert N., Co. .....
Austin Co. .....
Austin Machinery Corp. .....
Axelson Machine Co. 24

B

Babcock & Wilcox Tube Co., The .....
Badger, E. B., & Sons Co. .....
Baker Casing Shoe Co. .....
Baldwin Chain & Mfg. Co. .....
Banner Rock Products Co. .....
Barber Asphalt Co., The .....
Barber-Greene Co. .....
Barco Manufacturing Co. .....
Barnickel, Wm. S., & Co. 190
Barnsdall Refineries, Inc. .....
Bartlesville Supply Co. 175
Bartlett Hayward Co., The 182
Beaumont Iron Works Co. .....
Belmont Packing & Rubber Co. .....
Bessemer Engine Co. 121
Bethlehem Steel Co. .....
Bignall & Keeler Machine Works 136
Bonney-Floyd Co., The C-17
Borden Co., The .....
Bovaird Supply Co., The .....
Bowser, S. F., & Co., Inc. C-22
Braden Steel Corp. .....
Braun, C. F., & Co. 55
Breeze Bros. Co., The C-15
Brewster Co., Inc., The .....
Bridgeport Machine Co. .....
Bristol Co. .....
Broderick & Bascom Rope Co. 18
Brown, Arthur C. 190
Brown Instrument Co. .....
Brownell Co. .....
Buckeye Traction Ditcher Co. 140
Buda Co. .....
Buffalo Gasolene Motor Co. 16
Burt Mfg. Co. .....
Butler Mfg. Co. .....
Byers, A. M., Co. .....
Byron Jackson Pump Mfg. Co. 4

C

Campbell, J. A. 180
Carbondale Machine Co. .....
Carey, The Phillip, Co. .....
Caterpillar Tractor Co. .....
Celite Products Co. 144
Central Alloy Steel Corp. .....
Central Tube Co. .....
Chain Belt Co. .....
Champion Machine & Forging Co. C-14
Chapin-Fulton Mfg. Co., The 187
Chapman Valve Mfg. Co. .....
Chestnut & Smith Corp. 73
Chicago Bridge & Iron Works .....
Chicago Pneumatic Tool Co. .....
Chisholm-Moore Hoist Corp. 65
Cincinnati Milling Machine Co., The ..C-18
Clark Bros. Co. 133
Classified Wants 148-149
Climax Engineering Co. .....
Colona Mfg. Co. .....
Columbian Rope Co. .....
Connor, The W. B., Co., Inc. .....
Consolidated Ashcroft Hancock Co., Inc.
Continental Supply Co., The 21
Cooke Seal Ring .....
Cooper, C. & G., Co. ..C-1, C-12, C-13, C-24
Coronado Hotel, The .....
Crane Co. C-23
Crane Packing Co. 187
Crescent Belt Fastener Co. .....
Crucible Steel Co. of America .....
Curtis & Curtis Co., The 188

D

D. & B. Pump & Supply Co. .....
Darling Valve & Mfg. Co. .....
Dart, E. M., Mfg. Co. .....
Davis, G. M., Regulator Co. 128
Dearborn Chemical Co. .....
Delta Electric Co. 188
Detex Watchclock Corp. .....
Dixon, Joseph, Crucible Co. 178
Donovan Boiler Works, Inc. .....
Drane Humphreys Co., Inc. .....
Dresser, S. R., Mfg. Co. 45
Dunn Mfg. Co. .....

E

Eagle-Picher Lead Co. .....
Economy Pump & Oil Tool Co., The ..
Edward Valve & Mfg. Co., The .....
Elliott Core Drilling Co. .....
Empire Oil & Refining Co. 31
Emsco Derrick & Equipment Co. 10
Engineering, Research & Equipment Co.
Erie Bolt & Nut Co. C-7
Erie Forge Co. C-21
Ethyl Gasoline Corp. .....

F

Fairbanks-Morse & Co. .....
Fenwick-Reddaway Mfg. Co. .....
Fisher Governor Co. 135
Fisk Tire Co., Inc., The .....
Fiske, Leland E. .....
Flexible Steel Lacing Co. .....
Ford Chain Block Co. .....
Foster Wheeler Corp. .....
Foxboro Co., Inc., The .....
Franklin Valveless Engine Co. .....
Frick-Reid Supply Corp. 30
Fulton Iron Works Co. .....

G

Gardner-Denver Co. .....
Garlock Packing Co. C-11
Gaso Pump & Burner Mfg. Co. .....
.....Inside Back Cover
General Electric Co. .....
Gilbert & Barker Mfg. Co. .....
Goble, B. G. .....
Goodrich, B. F., Rubber Co. .....
Goodyear Tire & Rubber Co. .....
Gott, H. P., Mfg. Co. 184
Goulds Pumps, Inc. 130
Graver Corp. 171
Gray Processes Corp. .....
Greenspon's, Joseph, Sons, Iron & Steel Co. 181
Griscom-Russell Co. 6
Guiberson Corp. 13
Gulf-Carribbean Steamship Line, Inc. ..145
Gulf Refining Co. 22

H

Halliburton, Erle P., Co. .....
Halliburton Oil Well Cementing Co. ... 53
Harbison-Walker Refractories Co. .....
Harrell, F. O. 190
Harrisburg Pipe & Pipe Bending Co. ..
Haynes Stellite Co. 115
Hazard Wire Rope Co. .....
Heat Transfer Products, Inc. 185
Heppenstall Forge & Knife Co. .....
Hercules Motors Corp. .....
Hercules Supply Co. .....
Heydrick Mapping Co. 190
Hill, Hubbell & Co. .....
Hills-McCanna Co. .....
Hinderliter Tool Co. .....
Hope Engineering Co. 12
Hough, Charles N., Mfg. Co. .....
Hughes Tool Co. .....Back Cover
Humble Oil & Refining Co. .....
Hunt, Robert W., Co. 188
Hussmann Hotel .....
Hyatt Roller Bearing Co. .....

I

Imperial Belting Co. .....
Imperial Royalties Co. 190
Ingersoll-Rand Co. .....
International Cement Corp. .....
International Compositions Co. 188
International Creosoting & Construction Co. .....
International Derrick & Equip. Co. 32
International Harvester Co. of America
International Nickel Co., Inc., The .....
International Supply Co. .....

J

Jarecki Mfg. Co. 173
Jefferson Union Co. .....
Jenkins Bros. .....
Jensen Brothers Mfg. Co. .....
Johns-Manville Corp. .....
Jones & Laughlin Steel Corp. 25
Jones, The S. M., Co. 186

K

Kansas City Testing Laboratory .....
Kaw Steel Construction Co. 23
Kellogg, M. W., Co. 190
Kelly Company .....
Kelly, John Eoghan .....
Kennedye-Plumb Corp. 184
Kennedy Valve Mfg. Co., The .....
Kerotest Mfg. Co. .....
Kohler Co. .....
K-W Ignition Corp., The .....

L

Landis Machine Co. 3
Larkin & Co. .....
Layne & Bowler Co. 29
Leader Iron Works .....
Lehmann Machine Co. .....
Leschen, A., & Sons, Rope Co. .....
Lients, B. P., & Co. .....
Lincoln Electric Co. .....
Linde Air Products Co. .....
Link-Belt Co. .....
Long-Bell Lumber Co., The 179
Longyear, E. J., Co. .....
Lorraine Corp., The .....
Lucey Products Corp. .....
Ludlow Valve Mfg. Co. 19
Lufkin Fdy. & Mch. Co., The .....
Lufkin Rule Co. 190
Lummus, The Walter E., Co. 174
Lunkenheimer Co. 185

Mc

McCord Radiator & Mfg. Co. 127
McEverlast, Inc. .....
McEvoy, J. H., & Co. .....
McGregor Working Barrel Co. 182
McIntosh & Seymour Corp. .....
McKee, Arthur G., & Co. .....

M

MacGregor Valve Co. .....
Mack International Motor Truck Corp. .
Macwhyte Co. .....
Madison-Kipp Corp. C-16
Magnolia Petroleum Co. .....
Maloney Tank Mfg. Co. .....Front Cover
Manzel Bros. Co. .....
Marion Machine Fdy. & Supply Co. .....
Marsh Gauge Pole Co. 186
Mason Regulator Co. 131
Mathieson Alkali Works, Inc. 7
Merco Nordstrom Valve Co. .....
Merrick & Longbottom, Inc. 185
Merrill Company, The .....
Metric Metal Works .....
Mettler, Lee B., Co. 15
Midwest Piping & Supply Co. .....
Miller, Max B., & Co., Inc. 62
Milton, S. G., & Son .....
Moon Mfg. Co. 182
Moore, Lee C., & Co., Inc. 68-69
Morse-Starrett Products Co. .....
Myers, F. E., & Bro., Co. 184

N

National Petroleum Engineering Co. 190
National Supply Co. 112-113
National Transit Pump & Machine Co. .. 51
National Tube Co. 27
Naturaline Company of America 73
Nellan, Schumacher & Co. 132
Newton Process Mfg. Co. 43
Norris Brothers, Inc. 146
North American Car Corp. .....
Northern Pump Co. .....
Nugent & Co., Wm. W. C-19, 190
Nuttall, R. D., Co. 26
Nye Tool & Machine Works .....

O

Oakite Products, Inc. .....
O'Brien Steel Construction Co. 183
Ohio Injector Co., The .....
Ohio Steel Foundry Co., The C-10
Oil Conservation Engineering Co., The ..176
Oil Country Specialties Mfg. Co. .....
Oil Insurance Association 189
Oil Well Improvements Co., The .....
Oil Well Supply Co. 77
Oklahoma Contracting Co. .....
Oklahoma Gas & Electric Co. .....
Oxweld Acetylene Co. .....

P

Page Steel & Wire Co. 179
Parkersburg Machine Co. .....
Parkersburg Rig & Reel Co. 125
Parsons Co., The 186
Patrick, R. S. 183
Patterson-Ballagh Corp. 129
Pattin Brothers Co. .....
Penberthy Injector Co. .....
Petroleum Iron Works Co. .....
Pforzheimer, Carl H., & Co. 183
Phillips Petroleum Co. 169
Pittsburgh-Des Moines Steel Co. .....
Pittsburgh Equitable Meter Co. 186
Pittsburgh Steel Products Co. .....
P. L. & M. Co. .....
Pomona Pump Co. .....
Powell, William, Co. .....
Power Piping Co. 183
Prescott Co., The .....
Prest-O-Lite Co., Inc., The 71

P

Pure Oil Co. 8
Pyle National Co. 147
Pyrene Manufacturing Co. 143

Q

Quaker City Rubber Co. .....

R

Reading Iron Co. 5
Reading Steel Casting Co., Inc. 126
Regan Forge & Engineering Co. 177
Reid, Joseph, Gas Engine Co. .....
Reo Motor Car Co. .....
Republic Iron & Steel Co. 122
Republic Supply Co. .....
Rhode Island Fittings Co. .....
Riter-Conley Co. 184
Robinson Orifice Fittings Co. 168
Ross-Meehan Foundries .....
Russell Mfg. Co., The .....
Ryerson, Joseph T., & Sons, Inc. 186

S

Safety Gas Main Stopper Co. 190
Shaffer, J. E., Co. .....
Shaw, S. F. .....
Sinclair Refining Co. 159
Sivyer Steel Casting Co. .....
Skelly Oil Co. .....
Skinner, M. B., Co. .....
Smith, A. O., Corp. 17
Smith Separator Co. 135
Smooth-On Mfg. Co. .....
Sootless Spark Plug Co. .....
South Chester Tube Co. .....
Southern Cornice Works .....
Southern Pacific Lines 180
Southwestern Engineering Corp. .....
Spang & Co. .....
Spang, Chalfant & Co., Inc. 2
Spartan Aircraft Co. .....
Standard Steel Works 181
Star Drilling Machine Co. .....
Staynew Filter Corp. .....
Steiner, George 188
Stevens Hotel, The 139
Stitt Ignition Co. C-7
Stockham Pipe & Fittings Co. .....
Stoody Co. .....
Stork Engineering Co. 199
Strom Steel Ball Co. 141
Sullivan Machinery Co. .....
Sun Shipbuilding & Dry Dock Co. .....
Sure Shot Torpedo Co. .....
Swartwout Co., The .....
Sweet, Wm. J., Foundry Co. .....

T

Taubman Supply Corp. .....
Templeton, Kenly & Co., Ltd. .....
Texas Gulf Power Co. .....
Texas Pacific Coal & Oil Co. .....
Thermoid Rubber Co. .....
Timken Roller Bearing Co. 66
Titusville Iron Works Co., The .....
Toledo Pipe Threading Machine Co. ...123
Traction Machine Co., The 189
Trimont Mfg. Co. 134
Trumble Gas Trap Co. .....
Tulsa Boiler & Machinery Co. 11
Tulsa Sheet Metal Co. .....
Twin Disc Clutch Co. .....

U

Union Wire Rope Corp. .....
United Air Cleaner Co. .....
United States Electrical Tool Co., The ..C-20
Universal Oil Products Co. 49

V

Vez Company 142
Victaulic Co. of America 57
Victor Balata & Textile Belting Co. ..189
Vogt, Henry, Machine Co. .....

W

Wagner Electric Corp. .....
Wailes Dove-Hermiston Corp. 58
Walworth Co. 1
Washburne, Chester W. 190
Waukesha Motor Co. 79
Welding Engineering Co. .....
Westcott & Greis .....
Westinghouse Electric & Mfg. Co. .....
West Texas Utilities Co. 28
Wico Electric Co. .....
Wieman-Kammerer-Wright, Inc. .....
Williams, J. H., & Co. .....
Williamsport Wire Rope Co. 116
Williams Tool Corp. 138
Wilson Oil Tools Corp. .....
Wilson-Snyder Mfg. Co. .....
Wilson Welder & Metal Co., Inc. .....
W-K-M Company, Inc. .....
Worthington Pump & Machinery Corp...
Wright Mfg. Co. .....

Y

Yale & Towne Mfg. Co. .....
Young Engine Corp. .....

Z

Zwetsch Heinzelmann & Co. .....